A STUDY TO ASSESS THE EFFECTIVENESS OF ACUPRESSURE ON RELIEF OF DYSMENORRHOEA SYMPTOMS AMONG ADOLESCENT GIRLS IN SELECTED SCHOOLS AT NAGERCOIL

A DISSERATATION IS SUBMITTED TO THE TAMIL NADU DR. M.G.R MEDICAL UNIVERSITY, CHENNAI, IN PARTIAL FULFILLMENT FOR THE DEGREE OF MASTER OF SCIENCE IN NURSING

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APPROVED BY THE DISSERTATION COMMITTEE ON :January, 2016

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INTERNAL EXAMINER **EXTERNAL EXAMINER**

BONAFIDE CERTIFICATE

This is to certify that the dissertation entitled **"A study to assess the effectiveness of acupressure on relief of dysmenorrhoea symptoms among adolescent girls in selected schools at Nagercoil"** is a Bonafide and Genuine Research work Carried out by **Mrs. M. Asifa Prim Malar** under the Guidance of **Mrs.Baby Uma M.Sc.N.** Professor, Nehru Nursing College, Vallioor, in Partial fulfillment for the Degree of Master of Science in Nursing under the Tamil Nadu Dr. M.G.R Medical University, Chennai.

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This is to certify that the dissertation entitled **"A study to assess the effectiveness of acupressure on relief of dysmenorrhoea symptoms among adolescent girls in selected schools at Nagercoil"** is a bonafide research work done by **Mrs. M. Asifa Prim Malar**, in partial fulfillment for the Degree of Master of Science in Nursing under the Tamil Nadu **Dr.M.G.R Medical University, Chennai.**

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DECLARATION

I hereby declare that the present dissertation entitled **"A study to assess the effectiveness of acupressure on relief of dysmenorrhoea symptoms among adolescent girls in selected schools at Nagercoil"** is the outcome of the original research work undertaken and carried out by me, under the guidance of **Mrs. Baby Uma M.Sc.N.** Professor, Nehru Nursing College, Vallioor, I also assure that the material of this has not formed in any way, the basis for the award of any degree or diploma in this University or any other Universities.

Place: **Mrs. M. Asifa Prim Malar**

Date: M.Sc (N), II year,

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Place: Vallioor,

Date: **Investigator.**

ABSTRACT

Statement of the problem

"A study to assess the effectiveness of acupressure on relief of dysmenorrhoea symptoms among adolescent girls in selected schools at Nagercoil."

Objectives

- To assess the level of pain and dysmenorrhoea symptoms among adolescent girls in Experimental and Control group.
- To compare the level of pain and dysmenorrhoea symptoms before and after the application of acupressure in experimental group and without intervention in control group.
- To determine the association of pretest level of pain and dysmenorrhoea symptoms with selected demographic variables in Experimental group

Hypotheses

H1: There is a significant difference in level of pain and dysmenorrhoea symptoms before and after application of acupressure in experimental group and without intervention in control group.

H2: There is significant association of pre intervention level of pain and dysmenorrhoea symptoms with selected demographic variables among adolescent girls.

Methods The research design selected for the study was Time Series design .The study was conducted in LMPC Higher secondary School, Puthalam and LMS Higher secondary School, Zionpuram. The tool used for data collection was consisting of demographic variables such as Age, age at menarche, type of family,duration of menstruation and family history of dysmenorrhoea. Numerical pain rating scale and dysmenorrhoea symptoms assessment rating scale was used to assess the the level of pain and dysmenorrhoea symptoms.

The pilot study was conducted in LMPC Higher secondary School, Puthalam and LMS Higher secondary School, Zionpuram. The tool was validated by five experts and the reliability of the tool was established by inter-rater reliability method. Findings revealed that the tool was feasible, reliable and practicable to conduct the main study.

60 adolescent girls who fulfilled the inclusion criteria were selected for the study. Out of which 30 adolescent girls were assigned to experimental group and 30 were assigned to control group through the convenient sampling technique. Based on the inclusion criteria the samples were selected and allotted to the experimental and control group.

Results

For comparing the level of pain soon after the intervention in experimental group , the mean post test score was 3.7. In control group ,the mean post test score was 5.20. Calculated unpaired t test value 4.23was found to be more than the table value. This data had indicated that there was significant reduction of pain score.

30 minutes after intervention in experimental group , the mean post test score was 1.56. In control group ,the mean post test score was 5.13. Calculated

unpaired t test value 11.74 was found to be more than the table value. This data had indicated that there was significant reduction of pain score. The whole data had denoted that Acupressure was highly effective in reducing level of pain .

For comparing the level of dysmenorrhoea symptoms soon after the intervention in experimental group , the mean post test score was 24.2. In control group, the mean post test score was 36.8. Calculated unpaired t test value 5.12 was found to be more than the table value. This data had indicated that there was significant reduction of dysmenorrhoea symptoms score.

30 minutes after intervention in experimental group , the mean post test score was 13.3. In control group, the mean post test score was 37.96. Calculated un paired t test value 12.20was found to be more than the table value. This data had indicated that there was significant reduction of dysmenorrhoea symptoms score, The whole data had denoted that Acupressure was highly effective in reducing dysmenorrhoea symptoms

The study shows that in Experimental group soon after the intervention, 15(50%) had mild pain, 15(50%) had moderate pain, and none of them had severe pain . In control group 1(3.33%) had mild pain, 27(90%) had moderate pain, 2(6.67%) had severe pain. 30 minutes after the intervention 4(13.33%) had no pain, 26(86.67%) had mild pain, and none of them had moderate, and severe pain . In control group 1(3.33%) had mild pain, 28(93.33%) had moderate pain, 1(3.33%) had severe pain. It is inferred that application of Acupressure was highly effective in relieving pain and dysmenorrhoea symptoms among all experimental adolescent girls.

Also the study reveals that there is no significant association between selected demographic variables such as age, age at menarche, type of family and family history of dysmenorrhoea except duration of menstruation.

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CHAPTER-I

INTRODUCTION

“I would toss and turn in bed while holding my tummy in pain every month before and during my period. My legs would ache and my back would feel broken. It was so painful that I used to weep and gulp down any painkiller that I could lay hands on”

Adolescent period is a special period in the life of women. It is a time of moving from the immature childhood into the maturity of adulthood. Adolescent period is characterized by marked physiological changes, development of sexual characteristics, efforts toward the construction of identity.

Menarche is the onset of menstruation and it is one of the most significant milestones in a woman's life. The mean age at menarche varies from population to population and is known to be a sensitive indicator of various characteristics of population including nutritional status, geographical location, environmental conditions and magnitude of socioeconomic inequalities in a society.

Studies suggested that menarche tends to appear earlier in life as the sanitary, nutritional and economic conditions of a society improve. For most females, it occurs between the age of 10 and 16 years; however, it shows a remarkable range of variation. The normal range for ovulatory cycles is between 21 and 35 days. While most periods last from three to five days, duration of menstrual flow normally ranges from two to seven days. For the first few years after menarche, irregular and longer cycles are common.

Primary Menstruation is a periodic physiologic discharge of blood mucous and other cellular debris from the uterine mucosa. It is caused by increased endometrial prostaglandin production. This will stimulates myometrial contractions, ischaemia and sensitization of nerve endings. The level of prostaglandin will be high during the first two days of menses, when symptoms peak. Each cycle involves three phases based on events in the ovary and in the uterus. The ovarian cycle consists of the follicular

phase, ovulation, and luteal phase. The uterine cycle is divided into menstruation, proliferative phase, and secretary phase. The term dysmenorrhoea is derived from the greek words ‘dys’ meaning difficult or painful or abnormal, ‘meno’ meaning month and ‘rrhea’ meaning flow. It may be mild, moderate, or severe. Although it is not a serious medical problem. It is severe enough to disturb adolescent girls from functioning for a day or two days each month.

Dysmenorrhea is defined as cramping pain in the lower abdomen occurring just before or during menstruation in the absence of other diseases such as endometriosis. (Coco AS, 1999).

Dysmenorrhea refers to the painful menstrual cramps of uterine origin. It is considered as a common complaint among adolescent girls. Dysmenorrhea is the main cause for school and work absenteeism among adolescent girls. Dysmenorrhea is classified as primary or spasmodic and secondary or congestive. Primary dysmenorrhea is usually not related to a specific problem with the uterus. Primary dysmenorrhea symptoms may begin a day or so before the menstrual flow begins. The symptoms of primary dysmenorrhea includes physical symptoms as lower abdominal cramps, back ache, head ache, leg cramps, physiological symptoms as dizziness, profuse sweating, gastrointestinal symptoms as nausea, vomiting, diarrhoea or constipation, functional symptoms as difficult to concentrate, school absenteeism It has a direct negative impact on social, academic and sports activities of many female adolescents. Secondary dysmenorrhea is the menstrual pain caused by any anatomic or macroscopic pelvic pathology.

Dysmenorrhoea complications are pain consists of suprapubic cramping and/or aching radiating down the anterior thighs and to the lumbosacral region, often accompanied by vomiting, fatigue, back pain, headaches, dizziness and diarrhea. The

main complication of dysmenorrhea is pain. It occurs in your lower abdomen during menstruation and may also be felt in your hips, lower back, or thighs. Other symptoms may include nausea, vomiting, diarrhea, lightheadedness, or general achiness. For most women, the pain usually starts shortly before or during their menstrual period, peaks after 24 hours, and subsides after 2 to 3 days. Sometimes clots or pieces of bloody tissue from the lining of the uterus are expelled from the uterus, causing pain. Dysmenorrhea pain may be spasmodic (sharp pelvic cramps at the start of menstrual flow) or congestive (deep, dull ache). The symptoms of secondary dysmenorrhea often start sooner in the menstrual cycle than those of primary dysmenorrhea, and usually last longer

Need and significance of the problem

"The adolescent girl still remains a young plant that neither gets light nor water. She remains the flower that could have blossomed but didn't….."

Kamala Bhasin from "Our Daughters"

India has one of the fastest growing youth populations in the world, with an estimated 190 million adolescents. Girls below 19 years of age comprising 21% of India's total population. In India 67.2% adolescent girls suffer from dysmenorrhea and 60% of them have disrupted daily routines. Dysmenorrhoea is painful menstruation which leads to a significant discomfort among adolescents. It is the leading cause of school absenteeism among adolescent girls. A study conducted in USA showed that 58% of girls suffered from severe menstrual flow.

The consequences of untreated dysmenorrhea range from lost of work and school hours to family and personal disruption. Therefore, dysmenorrhea affected

not only the untreated person but also affected family, social and national economics as well.

Kiran B et al (2012) performed a prospective cross sectional study to assess the prevalence and severity of dysmenorrhoea in medical and nursing students. 401students from SRM University Chennai and 97 students from Vydehi Institute of Medical Sciences and Research Center, Bangalore were selected. In Chennai prevalence of dysmenorrhea was found to be 76.30% .57.1% had severe and 19.20% had mild dysmenorrhoea. In Bangalore 73.19% had severe and 26.80% had mild dysmenorrhoea.

A Study conducted in Chennai showed that the prevalence of reproductive morbidities was very high among the study group; about 82 percent of girls reported having had at least one reproductive health problem during the survey. The mean number of problems reported was 2.5. Prevalence of dysmenorrhoea, severe backache during menstruation and white discharge were the major morbidities reported among adolescent girls. More than one third of girls (91/263) in the study had scanty/ excessive bleeding (56 had scanty and 35 had excessive bleeding problems) and about one fourth had irregular cycles. Dysmenorrhoea was highly reported by girls in late adolescence (15-18 years). The incidence of severe backache and scanty bleeding was higher among early adolescents (11-14 years). Menstrual irregularities and skin diseases were prevalent across all age groups.

Another study was conducted to find the incidence ofdysmenorrhoea among 1648 adolescent girls in selecteddistricts of Karnataka. In that the incidence of dysmenorrhoea was found to be 87%, of these 46.69% had severe pain during

menstruation. Among those 63% of girls experienced dysmenorrhoea before the onset of bleeding and 37% experienced after the onset of bleeding.

The study was conducted by **Anil** in **2010** on dysmenorrhoea among adolescent girls in Gwalior in India. An explorative survey technique with a correlational approach was used and nine hundred and seventy adolescent girls of age 15 to 20 years, studying in the higher secondary schools (Pre-University Colleges) of Gwalior was taken for the study. The results were the prevalence of dysmenorrhoea in adolescent girls was found to be 79.67%. Most of them, 37.96%, suffered regularly from dysmenorrhoea severity. The three most common symptoms present on both days, that is, day before and first day of menstruation were lethargy and tiredness (first), depression (second) and inability to concentrate in work (third), whereas the ranking of these symptoms on the day after the stoppage of menstruation showed depression as the first common symptoms. Negative correlation had found between dysmenorrhoea and the General Health Status as measured by the Body surface area.

A cross sectional descriptive study was conducted on **prevalence and severity** of dysmenorrhoea among first and second year female medical students in **rewa India**, to evaluate the menstrual problem specially dysmenorrhoea and its severity in female medical students and its effect on their regular activities. It was conducted on 107 female medical students, all participants were given a questionnaire to complete; participants were given 20 minutes to complete the questionnaire. The mean age of subjects at menarche was 12.5 (±1.52) years, with a range of 10-15 years. The prevalence of dysmenorrhoea was 73.83%; approximately 4.67% of dysmenorrhic subjects had severe dysmenorrhoea. The average duration between two periods and the duration of menstrual flow were 28.34 (±7.54) days

and 4.5 (±2.45) days respectively. Prevalence of other menstrual disorders like irregularity, prolonged menstrual bleeding, heavy menstrual bleeding and PCOD were 7.47%, 10.28%, 23.36% and 3.73% respectively. Among female medical students who reported dysmenorrhoea; 31.67% and 8.68% were frequently missing college & classes respectively. Premenstrual symptom was the second most (60.50%) prevalent disorder and 67.08% reported social withdrawal. Dysmenorrhoea and PMS is highly prevalent among female medical students, it is related to college/class absenteeism, limitations on social, academic, sports and daily activities. Maximum participants do not seek medical advice and self treat themselves with prostaglandin inhibitors; like Ibuprofen.

Banikarim, Chacko.,& Kelder (2000)conducted a study to determine the prevalence of dysmenorrhoea among the adolescents in U.S. The study findings shown that among total participants 85% reported dysmenorrhoea. Among these 38% reported school absenteeism due to dysmenorrhoea and (33%) missing individual classes, (59%) poor class concentration, (51%) affects sports, (50%) less class participation (46%) poor socialization, (35%) affects home work, (36%) affects test taking skills and (29%) affects grades.

A number of alternative therapies have been studied in the treatment of dysmenorrhea. They are acupressure, behavioral interventions, thiamine, vitamin E, topical heat, and transcutaneous electrical nerve stimulation is likely while the effects of acupuncture, fish oil, magnets, vitamin B12, Chinese herbal medicine hot application in the lower abdomen, light circular massage, meditation, and yoga, acupressure, mild exercise such as pelvic rocking exercise, aerobic exercise,

reflexology, rest and sleep. Most of the remedies for menstrual cramps are centered on dilating the blood vessels and easing the abdominal and back muscles.

Acupressure is art of treating diseases by applying pressure on specific points with the help of one's thumb. The purpose of acupressure is to promote the body's own healing power. When key acupressure points on the surface of the skin are pressed, muscular tension releases and the circulation of blood improves and the body's vital life energy, which the Chinese call "chi" energy, is promoted. Acupressure can be used to treat numerous conditions such as dysmenorrhoea, pain in the neck, shoulder, back, allergies and anxieties.

In today's busy life, dysmenorrhoea is a serious problem affecting the adolescence and it affects the day-to-day life. Most of the adolescents are not willing to consult the medical practitioner. They prefer to treat by home remedies. The merit of utilizing acupressure therapy as a nursing intervention has been proposed in the literature as a non-invasive measure to reduce dysmenorrhoea. Acupressure for dysmenorrhea may offer women a non invasive, cost-free, and timely way to manage dysmenorrhea on their own, thereby saving time, cost, and effort.

Many studies have shown that acupressure is effective for pain relief in general and acupressure of specific sites such as the SP6 point has been reported to alleviate dysmenorrhoea. The SP6 acupoint is the junction point of the liver, spleen, and kidney meridians, and it is proposed to strengthen the spleen, resolve and expel dampness, and restore balance to the blood, liver, and kidneys

Acupressure can be adopted as nursing interventions to alleviate dysmenorrhoea improve productivity, creativity, work performance and quality of life. It is a healing act using the fingers to skillfully press the points which stimulate the body's natural self, creative abilities. When these trigger points are pressed, it

releases muscular tension and promote circulation of blood and body's life force energy to aid healing. Acupressure point called 'SP6' point is used for menstruation pain. This point is located in 4 fingers above the lateral medial malleolus bone. [Wong et.al, 2009]

The community health nurse has an important task in conducting school health programme and educating adolescent girls as well as community regarding the various non-pharmaceutical measures and its effectiveness in controlling menstrual pain perception. In turn such education helps the adolescent girls to be equipped and empowered with knowledge and skills to face the future effectively.

Hence based on the above information, the researcher is motivated to act on and implement the pain relief measures for adolescent girls and empower them to manage dysmenorrhea. Hence the study is intended to assess the effectiveness of acupressure on relief of dysmenorrhoea symptoms among adolescent girls in selected schools. .

Statement of the problem

A study to assess the effectiveness of acupressure on relief of dysmenorrhoea symptoms among adolescent girls in selected schools at Nagercoil.

Objectives

- To assess the level of pain and dysmenorrhoea symptoms among adolescent girls in Experimental and Control group.
- To compare the level of pain and dysmenorrhoea symptoms before and after the application of acupressure in experimental group and without intervention in control group.

- To determine the association of pretest level of pain and dysmenorrhoea symptoms with selected demographic variables among adolescent girls.

Hypotheses:

H1: There is a significant difference in level of pain and dysmenorrhoea symptoms before and after the application of acupressure among adolescent girls in experimental group and without intervention in control group.

H2: There is significant association of pre test level of pain and dysmenorrhoea symptoms with selected demographic variables among adolescent girls.

Assumptions

- Adolescent girls who attained menarche may suffer from dysmenorrhoea.
- Acupressure practice may enable adolescent girls as good relaxation technique and relief of pain and dysmenorrhoea symptoms such as, nausea, vomiting, loss of appetite, weakness / tiredness, giddiness, headache, feeling of heaviness in lower abdomen, low back pain, fullness of breast/tenderness of breast, irritability, frequency of micturition, feeling urge to defaecate, unable to take bath, unable to eat, unable to go to school, Inability to concentrate on studies, feeling unstable, confined in the bed, feels like supporting the abdomen with pillow, screaming, anger / short temper, sorrow /moody, and not repond to others.
- Relief of dysmenorrhoea symptoms among adolescent girls may enhance them with better learning abilities.

Operational definitions:

1) **Assess**

It refers to the statistical measurement of levels of pain and dysmenorrhoea symptoms among adolescent girls as measured by numerical pain rating scale and dysmenorrhoea symptom assessment rating scale

2) **Effectiveness**:

In this study effectiveness refers to the extent to which acupressure produces significant changes in the level of pain and dysmenorrhoea symptoms experienced by the adolescent girls as measured by numerical pain rating scale and dysmenorrhoea symptom assessment rating scale.

3) **Acupressure:**

It is an ancient healing art that uses the fingers to certain points on the body to stimulate the body's self curative abilities.

In this study it refers to the pressure given in pressure point in SP6 (sanyyinjiao) which lies 4 fingers width above the tip of the medial malleolus on the posterior border of the tibia for the reduction of symptoms of dysmenorrhoea. Two complete fiveminutes cycle of pressure perform on each leg for a period of 20 minutes alternatively for each pressure cycle, on each side, SP6 will be pressed with a thumb for six seconds and release for twoseconds without pressure. This will be continued for each leg, and repeat four times to bring the total treatment time to 20 minutes. The Acupressure given on the first day of menstruation.

4) Dymenorrhoea symptoms:

Dysmenorrhoea symptoms is characterized by pain that occurs shortly before the onset of or during menstrual flow, and it is accompanied by Symptoms such as loss of appetite, nausea, vomiting, weakness / tiredness, giddiness, headache, feeling of heaviness in lower abdomen, low back pain, fullness of breast/tenderness of breast, irritability, frequency of micturition, feeling urge to defaecate, unable to take bath, unable to eat, unable to go to school, Inability to concentrate on studies, feeling unstable, confined in the bed, feels like supporting the abdomen with pillow, screaming, anger / short temper, sorrow /moody, and not repond to others. due to the contraction of uterine musculature especially on the first day of menstruation.

5) Adolescent Girls

It refers to the adolescent girls studying in high school or higher secondary school between the ages of 13-16years.

Delimitation:

The study is delimited to,

- The data collection period of only four weeks.
- Practice of only Acupressure.

Conceptual framework

The conceptual framework or model is a phenomenon made up of concepts that are the mental image of a phenomenon. These concepts are linked together to express their relationship between them. A model is used to denote symbolic representation of concepts.

This study intends to assess the prevalence and effectiveness of acupressure on dysmenorrhoea among adolescent girls. The investigator adopted the Ernestine **Widenbach's helping art of clinical nursing theory (1964).** Widenbach's prescriptive theory directs action towards an explicit goal. It consists of three factors such as central purpose, prescription and realities. A nurse develops a prescription based on a central purpose and implements it according to the realities of the situation. According to this theory, nursing practice consists of three steps which include

Step: 1 Identifying the need for help

Step: 2 Ministering the needed help

Step: 3 Validating that the need for help was met

Step 1: Identifying the need for help

Investigator identifies the need for help by assessing the demographic variables and the pre test assessment of the level of pain and dysmenorrhoea symptoms among adolescent girls by using Numerical pain rating scale and dysmenorrhoea symptoms assessment rating scale.

Step 2: Ministering the needed help

This refers to the provision of required help to fulfill the identified needs. It has 2 components. Prescription and Realities

Prescription: In this study prescription refers to acupressure.

Realities : Refers to

- Agent - The investigator who renders the acupressure.
- Recipient – The adolescent girls with mild, moderate and severe pain during menstruation.

- Goal – To reduce the level of pain during menstruation.
- Means and activity – Giving information by demonstration.
- Framework – Denotes the setting in which the care is rendered. (LMPC Higher Secondary School Puthalam)

Step: 3 Validating that the need for help was met

This step involves the assessment of level of pain after rendering the acupressure. Post assessment involves the assessment of level of pain and dysmenorrhoea symptoms. The level of pain and dysmenorrhoea symptoms was categorized as mild, moderate, and severe. Two possible outcomes are reduction in the level of pain and relief of dysmenorrhoea symptoms in the experimental group and no reduction in the level of pain and dysmenorrhoea symptoms in the control group.

SUMMARY

This chapter includes introduction, need for the study, statement of the problem, objectives, operational definition, hypothesis, assumption, delimitations, and conceptual frame work.

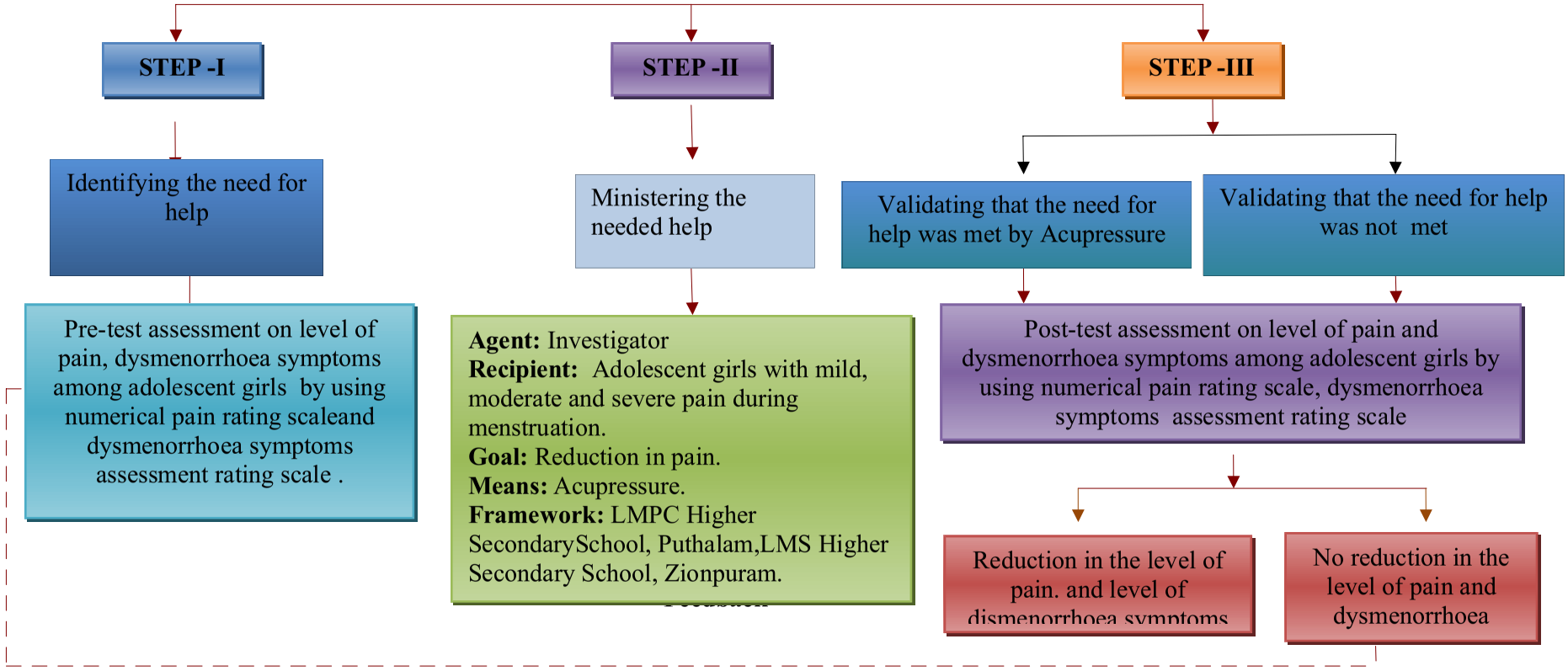

Fig 1: conceptual framework based on wiedenbach's prescriptive helping art of clinical nursing theory. (1964)

CHAPTER -II

REVIEW OF LITERATURE

A Review of literature is an essential part of scientific research. An extensive review was done to gain insight into the selected problem. The chapter deals with a review of published and unpublished research studies and form related materials for the present study. The review was organized and presented under the following headings:

1. Literature related to the incidence and prevalence of dysmenorrhoea
2. Literature related to dysmenorrhoea symptoms
3. Studies related to the effects of acupressure on dysmenorrhoea

1) Review of literature related to the incidence and prevalence of dysmenorrhoea among adolescents:

Nidhi Sharma , Benjamin Sagayaraj M., Balamma Sujatha (2013) conducted a observational cross-sectional study to find the burden of Dysmenorrhoea and menorrhagia At Saveetha University. The sample size was calculated as 252. The median age of menarche was 13-14 years. Regular menstrual cycles were apparent in 77.4% of our young adults. Irregular periods were present in 22.6% of teenage girls although the burden of dysmenorrhoea was estimated to be 70.4%. Menstrual cycle duration was more than 7days in 13.9% of individuals. Severe dysmenorrhoea was present in 9.5% of girls while 24.6 % and 36.5% experienced moderate and mild dysmenorrhoea respectively. Although 70.4% of girls experienced dysmenorrhoea only 3.6 % used pharmacotherapy due to fear of side effects. The burden of dysmenorrhoea was found much more than menorrhagia and irregular cycles in the university. A large proportion of young girls suffer from dysmenorrhoea, though only a few seek treatment.

Pitangui, et al(2013) conducted a cross sectional study to determine the prevalence, characteristics and effects on the activities of daily living of menstruation disturbances among adolescent girls in Brazil. 218 female adolescents of aged between 12 and 17 years were included in the study. A structured questionnaire was used to score the menstrual characteristics of dysmenorrhoea. 10 point numeric pain rating scale was used to measure level of pain during menstruation. Regarding the menstrual cycles 67% had regular and 33% had irregular menstrual cycle. Prevalence of dysmenorrhoea was 73%. 31% of School absenteeism was observed among the adolescents. 66% of the participants had affected activities of daily living due to dysmenorrhoea

Chaudhuri, A et al(2012) conducted a cross sectional study to assess the prevalence of dysmenorrhoea among adolescent girls in Chandigarh. This study was to determine the impact on their routine life and to ascertain the practices adopted by them for management of primary dysmenorrhoea. 224 school girls in standard VIII to X of the selected schools, who had attained menarche, were included in the study. A modified menstrual distress questionnaire was used to score the severity of dysmenorrhoea and its impact on their life. Visual analogue scale for pain was used to measure pain during menstruation. Prevalence of dysmenorrhoea was 59.82%. Sickness absenteeism due to dysmenorrhoea was reported in 25.8% girls. According to visual analogue scale for pain scoring, 52.3% had moderate pain and 25% cases had severe pain. Menstrual distress questionnaire scores showed mood swings, irritability, difficulty in concentrating, poor school performances were common problems. 8.6% of the study population went for physician consultation, 15.6% took painkillers, 12.5% used to hot water bottles, 3.1% practiced exercise, 26.6% practiced dietary modifications for reducing pain.

Chuamoor, K et al(2012) conducted a descriptive study to assess the prevalence of dysmenorrhoea among nurses in Sirija hospital. The objectives of the study were to determine the prevalence of dysmenorrhoea, impact on daily activity, quality of life and knowledge of management among nurses. The study samples included 493 female nurses from medicine Sirija hospital, Thailand. The prevalence of dysmenorrhoea was 70.2%. The prevalence of mild, moderate and severe dysmenorrhoea was 29.6%, 38.9% and 1.6% respectively. Dysmenorrhoea was significantly associated with age of participants, amount of menses and the family history of dysmenorrhoea. Nurses who had moderate dysmenorrhoea reported that the impact on daily activities are limited like sports activities (93%), social activity (66%) affected their concentration (81%) and absenteeism from work (16.5%). The study concluded that the prevalence of dysmenorrhoea among nurses and it had negative impact on daily activities and quality of life

Kumbhar, (2011) conducted a cross sectional study to assess the prevalence of dysmenorrhea and its impact on adolescent girls and to study the various symptoms of dysmenorrhea and its impact on quality of life of adolescent girls in **Kadapa town**.183 adolescent girls in the age group of 14-19 years were surveyed. The result revealed that out of 183 adolescent girls 119 (65%) had dysmenorrhea, 68.4% and 61.2% are from the urban and rural areas respectively. Out of 81 adolescent girls with family history of dysmenorrhea 60 (74.1 %) adolescent girls had dysmennorrhea. Sickness absenteeism is seen among 47.9% girls with dysmennorhea. Quality of life is significantly reduced among dysmennorhic girls. Almost 73.1% of rural girls rely on self help technique to manage the dysmenorrhea as compare to urban girls (55.2 %).

Kindi, R et al(2011) conducted a cross sectional study to assess the prevalence and impact of dysmenorrhoea among Omani high school students. The sample size

was 404 adolescent girls. Data was collected by self administered questionnaire The result showed that 94 % (n=380) of the participants had dysmenorrhoea. In that 27% (n=104) of them had mild pain, 41% (n=155) of them had moderate pain and 32% (n=121) of them had severe pain. During dysmenorrhoea 81% of them had limited sports activities, 75% of them had decreased class concentration, 59% of them had restricted homework, 45% of them had school absenteeism, 25% of them had limited social activities, and 8% of them had decreased academic performance. Only 3% (n=10) of them consulted a physician, 21% (n=80)of them took self medicated, and 55% (n=210) of them took no action. The commonest drugs used was parecetamol (n=60, 16%), ibuprofen (n=29,8%) and mefenemic acid (n=12,3%).

Singh, A. **(2010)** undertook a cross sectional descriptive study to evaluate the dysmenorrhea and its effect on their regular activities. 107 female medical students were selected .The result revealed that the prevalence of dysmenorrhea was 73.83%, 4.67% had severe dysmenorrhea. The average duration between two periods and the duration of menstrual flow were 28.34 (+/-7.54) days and 4.5 (+/-2.45) days .Among female medical students who reported dysmenorrhea, 31.67% and 8.68% were frequently missing college & classes respectively. Premenstrual symptom was the second most (60.50%) prevalent disorder and 67.08% reported social withdrawal.

2. Literature related to dysmenorrhea symptoms

Pembe, A.B et al(2011) conducted a study on dysmenorrhoea and coping strategies among secondary school adolescents in Ilala district, Tanzania. The aim of this study was to determine the prevalence and coping strategies for dysmenorrhoea among secondary school adolescents. This study was conducted in eight public and private secondary schools in illa municipal. A total of 880 girls in secondary school

who attained menarche were interviewed using a self administered questionnaire. The study result was the mean age at menarche was 13.3 years with the youngest at nine years and the oldest at sixteen years. Six hundred fifty two (74.1%) girls had dysmenorrhoea. Medication was used by 362 (55.5%) girls to relieve dysmenorrhoea. Commonest medications used were paracetamol and diclofenac. Adolescents who missed school due to dysmenorrhoea were 154 (23.6%) and 140 (21.5%) missed school activities. This study concluded that high proportion of secondary school adolescents has dysmenorrhoea in Ilala municipal with a significant number missing school and social activities

Parker, M.A et al(2010) performed a cross sectional study on the menstrual disorder of teenagers, determining typical menstrual patterns and menstrual disturbance in high school girls in the Australian Capital Territory. The study was conducted among 1051 girls aged between 15-19 years and the data was collected by a quantitative survey. The study result revealed that the typical menstruation in adolescence includes pain (93%) and mood disturbance (73%). Highly significant associations were found between increasing severity of menstrual pain, number of menstrual related symptoms, with life activities and school absence. These associations indicate that approximately 25% of the sample had marked menstrual disturbances, 21% of them experienced severe pain, 26% had school absence, 26% of them suffering with five or more symptoms, 24% of them reported moderate to high interference with four out of nine life activities. Approximately 10% of them reported atypical symptoms associated with menstruation. This study was concluded that menstrual pain and symptoms are common in teenagers.

Nayana S. George , Sangeetha Priyadarshini & Sheela Shetty(2013) conducted a descriptive study to assess dysmenorrhoea, Characteristics and associated symptoms among adolescent girls in selected residential schools of Udupi district, Karnataka. The sample size were 233 adolescent girls from four residential schools. The schools selected were Sharada residential school, Udupi,Sri Bhuvanendra residential school, Karkala, Little rock residential school, Brahmavar and Jawahar Navodaya Vidyalaya, Hebri. in Udupi district. Random sampling was used to select thesample by using lottery method.

The results shows that the prevalence of dysmenorrhoea in adolescent girls was found to be 146(62.70%). Out of 233 samples 28(12%) had mild pain,77(33%) had moderate pain and 41(17.6%) had severe pain during menstruation. Tiredness 110(75.34%), back pain 106(72.60%) and irritability 97(66.43%) were the most common symptoms associated with dysmenorrhoea. A positive association was found between dysmenorrhoea and family history. Dysmenorrhoea is a very common problem among adolescent girls and they experience a number of physical, gastrointestinal and psychological symptoms. The findings of this study indicate the magnitude of the problem and the need for appropriate intervention through a change in lifestyle. Majority of the adolescent girls 146(62.7%) attained menarche at the age of 12-13 years. Study showed an association between family history and dysmenorrhoea (Z=16.673,p-value=0.001) and there is no association between age in years, onset of menarche, duration of menstrual flow, dietary pattern and family history of dysmenorrhoea. It showed tiredness 110(75.34%), back pain 106 (72.60%) and irritability 97(66.43%) as the most common symptoms associated with dysmenorrhoea. Diarrhoea 10(6.84%), nausea 16(10.9%) and vomiting 16(10.9%)were the least common symptoms associated with dysmenorrhoea among adolescent girls.

3. Review of literature related to the effects of acupressure for dysmenorrhoea:

Sujatha Dakhe (2012) conducted a pre-experimental study to assess the effectiveness of acupressure therapy (Sp6 point) in the intensity of dysmenorrhoea among nursing students during the first day of menstruation among nursing students at selected Nursing Colleges of Indore. The study approach was pre-experimental with Two group pre-test post-test Research Design. Purposive sampling technique was done to select 60 respondents suffering with dysmenorrhoea during their first day of menstruation . Data was collected with the help of Numerical Pain Intensity Scale for assessing the intensity of dysmenorrhoea and the pain intensity was recorded. Participants received acupressure therapy, in Group I at every 4 hours for the first day of menstruation alternating between each leg at the Sanyinjiao (SP6) acupoint, whereas those in the Group II received acupressure therapy at every 8 hours for the first day of dysmenorrhoea by the researcher. In each session of acupressure, the researcher took pretest & post test by administering the Numeric Pain Intensity Scale (NPIS) to the respondents experiencing dysmenorrhoea. Findings of the study revealed that there was a significant difference in pain intensity assessed by Numerical Pain Intensity Scale of Group I and Group II $p<0.001$. Hence, it was inferred that acupressure therapy (SP6 point) in Group I was more effective in reducing the intensity of dysmenorrhoea.

ShahlaGharloghi, ShahnazTorkzaheraniet. al. (2012) conducted the Crossover Clinical Trial study to determine the effects of Acupressure at Sanyinijiao(Sp6) and Diji(Sp8) point on pain severity of primary dysmenorrhoea and the associated systemic symptoms. A total 50 females between the age group of 18-30 yrs were participated in the study. The study was conducted in Srpolezahab Health Centre. Subject were assigned to one of 2 groups and evaluated during 3 menstrual

cycle. Participants were instructed on the correct methods of locating either the Sp6 or Sp8 point and applying pressure. The Sp6 and Sp8 Acupressure was provided for 20 minutes. Through 3 months of follow up, on first menstrual cycles on initial assessment, information about severity of dysmenorrhoeal and systemic symptoms was obtained for both group

On the second month, Group A applied Acupressure at Sp6 and Group B at Sp8 point. On the 3rd menstrual cycle Acupressure for Group A is Sp8 point and Group B Sp6 point. The procedures were applied once per day during first 3 days of the menstruation period. The instrument used in this study included Mc Gill pain scale and associated systemic symptoms using a verbal multidimensional scoring system. Pain severity in the group using the SP6 point was 6.56 (±1.05) prior to acupressure, which diminished to 5.69 (±1.14) immediately after acupressure, 5.20 (±1.25) 30 minutes after acupressure, 4.20 (±1.41) 1 hour after acupressure, and 2.89 (±1.36) 2 hours after acupressure. In addition, mean (SD) pain severity in the group using the SP8 point was 6.84 (±1.09) prior to acupressure, which diminished to 4.47 (±0.99) immediately after acupressure, 4.08 (±1.01) 30 minutes after acupressure, 3.17 (±0.96) 1 hour after acupressure, and 2.03 (±0.94) 2 hours later. The reductions in pain severity were significant for all intervals and at both SP6 and SP8 points ($P < 0.001$).

Comparison of the acupressure applied at SP6 and SP8 points revealed that, for all intervals, acupressure at the SP8 point reduced pain severity significantly more than the SP6 point ($P < 0.001$). The findings of the study indicate that the severity of dysmenorrhoea pain diminishes significantly for up to 2 hours following treatment with Acupressure at the Sp6 andSp8 points (p less than0.001) , the severity of associated systemic symptoms reduced significantly after acupressure at the SP6 and

SP8 points, except for nausea and vomiting. Comparison of the severity of systemic symptoms with acupressure at the SP6 and SP8 points revealed no significant difference except for severity of fatigue, which was reduced significantly further with SP6 point compared to SP8 point (P = 0.004). Data were analyzed by Wilcoxon as a nonparametric test to compare two paired groups. The severity of pain and symptoms through variety of time and cycle were also compared by Friedman test. The accepted level of significance for all other analyses was P< 0.05. And these points may be used to alleviate the severity of systemic symptoms accompanying dysmenorrhoea.

Karthika.S (2011) conducted a quasi experimental study to assess the effectiveness of acupressure in reducing menstrual pain among adolescent girls with primary dysmenorrhea. Pre and post- test control group time series design was used.60 adolescent girls were selected and assigned to study group and control group. Acupressure was given to the study group on the sp6 meridian for 2 hours during dysmenorrhea. The result revealed that the mean pre-test pain score of study group was 5.23 and for control group 5.9 and there was a significant difference in control and study group t=13.695 (p<0.01).

Aswini.D.et.al.,(2011) conducted a comparative study to evaluate the effectiveness of acupressure versus yoga on symptoms of dysmenorrhoea among adolescent girls residing in Aloycious Girls Higher secondary school and CSI Girls Higher Secondary school hostel. Sample size was 100 adolescent girls in group I and II.Two group pretest and post test design was adopted. Numerical pain scale was used to measure the pain and rating scale was used to assess the symptoms of dysmenorrhoea. Intervention acupressure was given to group I and yoga was given to group II. The study results revealed that in groupI the mean symptoms of dysmenorrhoea score in pretest was higher than the mean post test,and the paired

't'value was 7.7 at $p<0.05$ level of significant. The symptoms of dysmenorrhoea score in pretest was higher than the mean post test score and paired 't'value was 11.19 at $p<0.05$ level of significance. Mean difference was 4.38.

Premalatha.A, (2010) conducted a study to assess the effectiveness of acupressure on dysmenorrhoea among adolescent girls (12-16 years) studying in Sakthi Higher Secondary School, Erode District. A total of 60 participants were assigned in experimental group and control group. Dysmenorrhoea pain was assessed by using numerical pain rating scale. Intervention acupressure was given 20 minutes for three days. Post test results showed that the mean pretest score was higher than the mean post test score .The study concluded that acupressure is an effective, simple, non-pharmacological measure to reduce to dysmenorrhoea.

Danny S(2009) conducted a study to find out the effectiveness on acupressure on reducing dysmenorrhoea among nursing students in a selected college at Mangalore, the research design used was pre experimental one group pretest post test design. Convenience sampling technique was used to select the samples 30 B.Sc Nursing students between the age group of 18-21 years. Pre test was done by using Numerical pain rating scale. Acupressure was given to the alternative legs at the sanyinjiao (Sp 6) acu points. The mean pre test score 5.367, (SD=1.829) is higher than the mean post test score 3.533 (SD=1.73), the mean difference is 1.834 and the paired 't' value is 6.26 . The study concluded that acupressure is an effective, simple, non-pharmacological measure to reduce to dysmenorrhoea.

C.L. Wong.et.al., (2009) conducted a study aims to evaluate the effects of Sanyinjiao (SP6) acupressure in reducing the pain level and menstrual distress resulting from dysmenorrhea. Forty participants with dysmenorrhea were assigned to either the acupressure group (n = 19) or the control group (n = 21). The

acupressure group received 20 min of SP6 acupressure during the initial intervention session and was taught to perform the technique for them to do twice a day from the first to third days of their menstrual cycle, 3 months subsequent to the first session. In contrast, the control group was only told to rest. Outcomes were measured through (1) the Pain Visual Analogue Scale (PVAS), (2) the Short-Form McGill Pain Questionnaire (SF-MPQ), and (3) the Short-Form Menstrual Distress Questionnaire (SF-MDQ).There was a statistically significant decrease in pain score for PVAS ($p = 0.003$) and SF-MPQ ($p = 0.02$) immediately after the 20 min of SP6 acupressure. In the self-care periods, significant reduction of PVAS ($p = 0.008$), SF-MPQ ($p = 0.012$), and SF-MDQ ($p = 0.024$) scores was noted in the third month of post-intervention.SP6 acupressure has an immediate pain-relieving effect for dysmenorrhoea. Moreover, acupressure applied to the SP6 acupoint for 3 consecutive months was effective in relieving both the pain and menstrual distress level resulting from dysmenorrhoea.

CHAPTER III

RESEARCH METHODOLOGY

This chapter deals with the methodology adapted to this study. It includes Research approach, Research design, Variables, Setting of the study, Population,

Sample, Sampling technique, Sample size, Sampling criteria, Description of tool, Validity, Reliability, Pilot study, Data collection procedure, Plan for data analysis and Ethical consideration.

Research approach

Quantitative research approach was used in this study.

Research design

According to ***Polit (2007)*** research design is the researcher's overall plan for obtaining answers to the research questions or for testing the research. Time series design was adapted in this study.

Experimental group: O1 X O2 O3

Control group : O1 - O2 O3

Key

O1 = Assessment of pain and dysmenorrhoea symptoms before intervention in Experimental and Control Group.

X = Acupressure

- = no intervention

O2 = Assessment of pain and dysmenorrhoea symptoms soon after intervention in Experimental group and without intervention in Control Group.

O3 = Assessment of pain and dysmenorrhoea symptoms 30 minutes after intervention in Experimental group and without intervention in Control Group

Variables

- **Independent variable** - Acupressure
- **Dependent variable** - Dysmenorrhoea symptoms

- **Demographic variables** - Age, Age at menarche, type of family, duration of menstruation, family history of dysmenorrhoea.

Setting of the study

The setting for this study was LMPC Higher secondary School, Puthalam which is located at 45 kilometers from Nehru Nursing College and LMS Higher secondary School, Zionpuram which is located at 45 kilometers from Nehru Nursing College.

Population

Target population

The population under study comprised of all the adolescent girls with dysmenorrhoea.

Accessible population

Adolescent girls in the age group between 13-16 years with dysmenorrhea who were studying in LMPC higher secondary school Puthalam,and L.M.S higher secondary school Zionpuram.

Sample:

Adolescent girls with dysmenorrhea who were studying in LMPC higher secondary school Puthalam and, L.M.S higher secondary school Zionpuram, and those who were fulfilled the inclusion criteria.

Sampling technique:

Convenient sampling technique was used in this study.

Sample size:

Sample size was 60 adolescent girls with dysmenorrhoea, 30 in experimental and 30 in control group.

Sampling criteria

Inclusion criteria:

- Only adolescent girls studying in 8^{th}-11^{th} standards in selected higher secondary school.
- Adolescent girls in the age group of 13-16 years.
- Having regular menstruation.
- Adolescent girls who are availble during data collection.
- Who are willing to participate in the study.

Exclusion criteria:

- The adolescent girls who have history of irregular menstruation.
- The adolescent girls who were taking analgesic for menstrual pain every month.
- Those who were having pathological dysmenorrhoea.
- Adolescent girls with abnormal behaviours and mental disorders.
- Regular menstruation with no dysmenorrhoea.

Description of tool

Research tool consists of two sections

Section A:

- Demographic variables such as age, age at menarche, type of family, duration of menstruation, , family history of dysmenorrhoea .

Section B:

1. Numerical pain rating scale

Observing the dysmenorrhoea pain with the help of numerical pain rating scale.

Scoring key

- ❖ No pain-0
- ❖ Mild – 1-3
- ❖ Moderate – 4-6
- ❖ Severe – 7-10

2. Modified Dysmenorrhoea Symptoms rating scale

Observing the dysmenorrhoea symptoms with the help of Modified Dysmenorrhoea Symptoms rating scale .

Scoring key

- ❖ Mild – 1-23
- ❖ Moderate – 24-46
- ❖ Severe – 47-69

Validity

The content validity of the tool was ascertained by 4 nursing experts and 1 paediatrician. The experts gave their opinions and suggestions for further modification of items. The formal tool was prepared as per the suggestion and advice given by experts.

Reliability

Inter rater reliability test was done and the calculated r value was 0.85 for numerical pain rating scale and r = 0.92 for Modified dysmenorrhoea symptoms rating scale which concluded that the tool was highly reliable

Pilot study

The pilot study was conducted in LMPC Higher Secondary School, Puthalam, and LMS Higher Secondary School, Zionpuram after receiving a formal approval from Head Mistress of the schools. The pilot study was conducted among six students three

in Experimental group and three in Control group. Samples were selected by using convenient sampling method. Pre test was conducted with the help of numerical pain rating scale and Modified dysmenorrhoea symptoms rating scale in Experimental and Control group. The intervention was given by applying thumb pressure over the Sp6 point for five minutes on each leg for a period of 20 minutes alternatively. For each pressure cycle, on each side pressure applied for six seconds and released for two seconds without pressure. Post test was conducted soon after and 30 minutes after intervention for Experimental group and without intervention for Control group. The tool was found to be feasible and practicable. No changes were made and the researcher proceeded the main study.

Data collection Procedure

After obtaining formal approval from the Principal of Nehru Nursing College and the headmistress of the selected schools, researcher proceeded with the data collection. The objectives were explained to the students before starting the data collection procedure, to get cooperation from the students. The study was conducted in two rural higher Secondary school at Kanyakumari district. . The study was conducted among 60 adolescent girls, 30 in Experimental group and 30 in Control group. Samples were selected by using convenient sampling method. Pre test was conducted with the help of numerical pain rating scale and Modified dysmenorrhoea symptoms rating scale in Experimental and Control group. The intervention was given by applying thumb pressure over the Sp6 point for five minutes on each leg for a period of 20 minutes alternatively. For each pressure cycle, on each side pressure applied for six seconds and released for two seconds without pressure. Post test was conducted soon after & 30 minutes after intervention for Experimental group and without intervention for Control group.

Plan for data analysis

Collected data was analyzed by using both descriptive and inferential statistics such as frequency, percentage, mean, standard deviation, chi square, paired 't' test and unpaired 't' test.

Descriptive ststistics:

1. Frequency and percentage distribution was used to analyze the demographic variables and to assess pain and level of dysmenorrhoea symptoms.
2. Mean and standard deviation was used to assess the effectiveness of Acupressure on relief of dysmenorrhea symptoms among adolescent girls.

Inferential statistics:

1. Paired't' test was used to compare the pre test and post test level of dysmenorrhea symptoms among experimental group and control group..
2. Unpaired't' test was used to compare post test level of pain among experimental group and control group..
3. Unpaired't' test was used to compare post test level of dysmenorrhea symptoms among experimental group and control group.
4. Chi-square was used to find the association of post test level of dysmenorrhea in adolescent girls among the experimental group and control group..

Ethical consideration

The study was conducted after the approval of the dissertation committee of Nehru Nursing College. Permission was obtained from the LMS Higher secondary school, Zionpuram ,LMPC Higher Seconday School, Puthalam. Oral consent was obtained from each adolescent girls before starting the data collection. Assurance was given to the adolescent girls regarding the confidentiality of the data collected.

Summary

This chapter consists of research approach, research design, variables, setting of the study, population, sample, sampling technique, sample size, sampling, description of tool, validity, reliability, pilot study, data collection procedure and plan for data analysis.

CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the analysis and interpretation of data collected to assess the effectiveness of acupressure in terms of reduction of pain and dysmenorrhoea symptoms. Descriptive and inferential statistics were used for analyzing the data on the basis of the objectives of the study. The data had been tabulated and organized as follows:

Section A: Description of demographic variables.

Section B:

1. Distribution of adolescent girls in Experimental group and control group according to the level of pain before intervention.
2. Distribution of adolescent girls in Experimental group and control group according to the level of dysmenorrhoea symptoms before intervention.
3. Distribution of adolescent girls in Experimental group and control group according to the level of pain soon after and 30 minutes after intervention in Experimental group and without intervention in Control group.

4. Distribution of adolescent girls in Experimental group and control group according to the level of dysmenorrhoea symptoms soon after and 30 minutes after intervention in Experimental group and without intervention in Control group .

Section C: Testing hypotheses

1. Comparison of pre test level of pain and dysmenorrhoea symptoms in experimental group and control group.
2. Comparison of pre and post test level of pain and dysmenorrhoea symptoms soon after intervention and 30 minutes after intervention in Experimental group and without intervention in Control group.
3. Comparison of post test level of pain and dysmenorrhoea symptmos soon after intervention and 30 minutes after intervention in Experimental group and without intervention in Control group.
4. Association between pre test level of pain and dysmenorrhoea symptoms with selected demographic variables in Experimental group

SECTION A

Description of demographic variables

Table 1 Frequency and percentage distribution of demographic variables in experimental and control group

n=60

S.No	Demographic variables	Experimental group n=30		Control group n=30	
		f	%	f	%
1.	**Age**				
	a) 13-14 years	11	36.67	10	33.33
	b) 15 -16 years	19	63.33	20	66.67
2.	**Age at menarche**				
	a) 10-13 years	18	60	17	56.67
	b) 14-16 years	12	40	13	43.33
3.	**Type of family**				
	a) Nuclear	21	70	20	66.67
	b) Joint	9	30	10	33.33

4.	**Duration of menstruation** a) < 3 days b) 3-5 days c) > 6 days	2 19 9	6.67 63.33 30	2 14 16	6.67 60 33.33
5.	**Family history of dysmennorhoea** a) No b) Yes	7 23	23.33 76.67	8 22	26.67 73.33

Table 1 shows that the distribution of adolescent girls, according to age in experimental group, 11(36.67%) of them belongs to the age group between 13 and 14 years, 19(63.33%) of them belongs to the age group between 15 and 16 years. In control group, 10(33.33%) of them belongs to the age group between 13 and 14 years, 20(66.67%) of them belongs to the age group between 15 and 16 years.

Distribution of adolescent girls according to their age at menarche shows that in experimental group, 18(60%) of them between 10 and13 years, 12(40%) of them between 14 and 16 years. In control group 17(56.67%) of them between 10 and13 years, 13(43.33%) of them between 14 and 16 years.

Distribution of adolescent girls according to their Type of family in experimental group, 21(70%) were belongs to nuclear family, 9(30%) were belongs to joint family. In control group 20 (66.67%) were belongs to nuclear family and 10(33.33%) were belongs to joint family.

Distribution of adolescent girls according to their duration of menstruation in experimental group, 2(6.67%) had less than 3days, 19(63.33%) had 3-6 days and 9(30%) had >6days . In control group, 2(6.67%) had less than 3days, 18(60%) had 3-5 days and 10(33.33%) had >6days.

Distribution of adolescent girls according to their family history of dysmenorrhoea in experimental group 7(23.33%) had no family history, 23(76.67%) %) had family history of dysmenorrhoea . In Control group,8(26.67%) had no family history, 22(73.33%) had family history of dysmenorrhoea

Section: B

Distribution of adolescent girls in experimental group and control group according to level of pain before intervention.

Table 2: Frequency and percentage distribution of adolescent girls according to the level of pain in experimental group and control group before intervention.

n=60

S.No	Level of pain	Experimental group n=30		Control group n=30	
		f	%	f	%
1.	No pain	0	0	0	0
2.	Mild pain	3	10	4	13.33
3.	Moderate pain	20	66.67	20	66.67
4.	Severe pain	7	23.33	6	20

Table 2 represents, before the intervention, in experimental group 3(10%) had mild pain, 20(66.67%) had moderate pain, 7(23.33%) had severe pain and none of them had no pain. In control group 4(13.33%) had mild pain, 20(66.67%) had moderate pain, 6(20%) had severe pain and none of them had no pain.

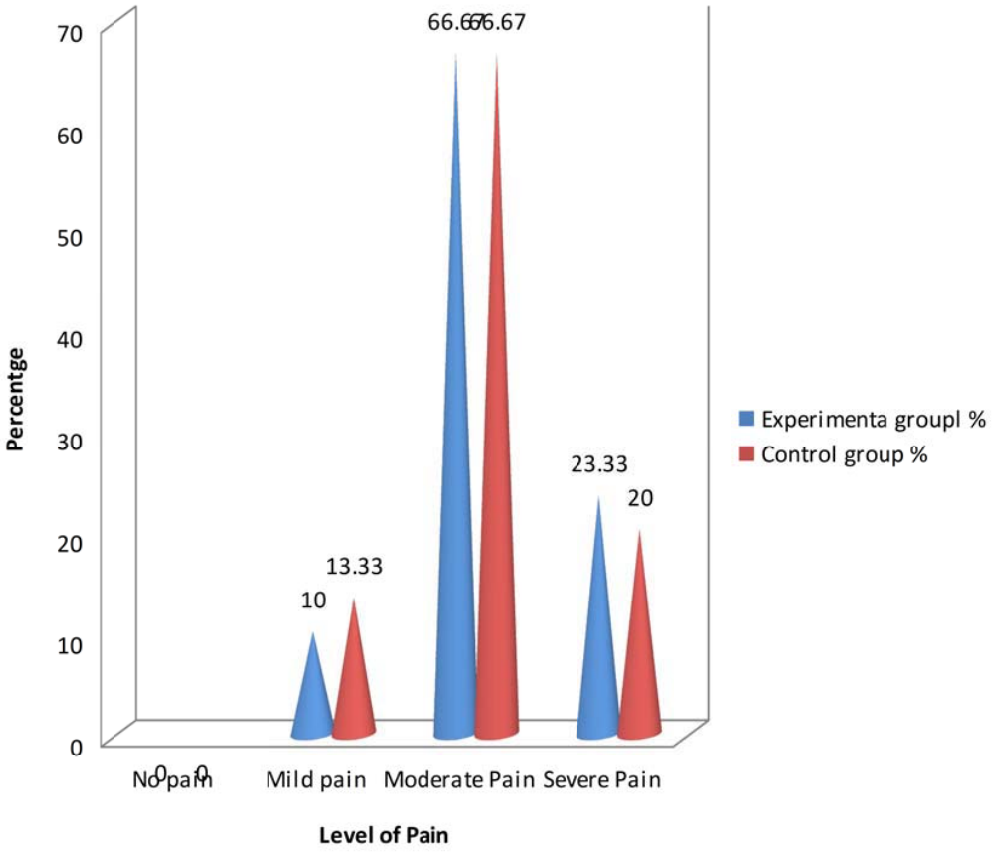

Fig-2: Percentage distribution of adolescent girls according to level of pain before intervention

Table 3:Frequency and percentage distribution of adolescent girls according to the level of dysmenorrhoea symptoms in experimental group and control group before intervention.

n=60

S.No	Dysmenorrhoea symptoms	Experimental group n=30		Control group n=30	
		f	%	f	%
1.	Mild symptoms	8	26.67	9	30
2.	Moderate symptoms	16	53.33	15	50
3.	Severe symptoms	6	20	6	20

Table 3 represents, In Experimental group before the intervention, 8(26.67%) had mild symptoms, 16(53.33%) had moderate symptoms, and 6(20%) had severe symptoms. In control group 9(30%) had mild symptoms15(50%%) had moderate symptoms, and 6(20%) had severe symptoms.

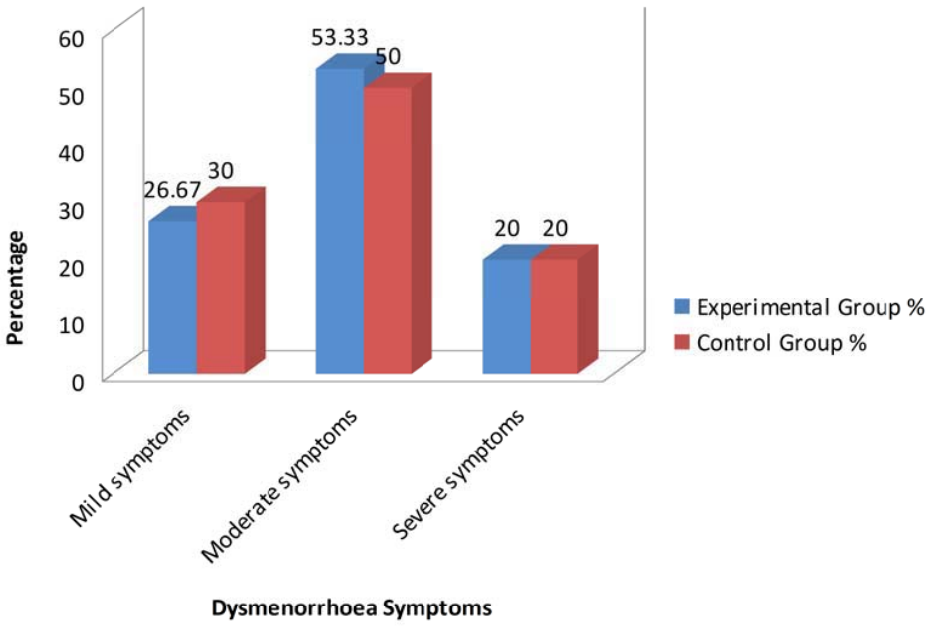

Fig-3: Percentage distribution of adolescent girls according to level of dysmenorrheal symptoms before intervention.

Table 4: Frequency and percentage distribution of adolescent girls according to the level of pain soon after and 30 minutes after intervention in Experimental group and without intervention in Control group .

n=60

S. No	Pain	Experimental group n=30				Control group n=30			
		Soon after		After 30 minutes		Soon after		After 30 minutes	
		f	%	f	%	f	%	F	%
1.	No pain	0	0	4	13.33	0	0	0	0
2.	Mild pain	15	50	26	86.67	1	3.33	1	3.33
3.	Moderate pain	15	50	0	0	27	90	28	93.33
4.	Severe pain	0	0	0	0	2	6.67	1	3.33

Table 4 represents soon after the intervention, in Experimental group 15(50%) had mild pain, 15(50%) had moderate pain, and none of them had severe pain . In control group 1(3.33%) had mild pain, 27(90%) had moderate pain, 2(6.67%) had severe pain. In Experimental group 30 minutes after the intervention 4(13.33%) had no pain, 26(86.67%) had mild pain, and none of them had moderate, severe pain . In control group 1(3.33%) had mild pain, 28(93.33%) had moderate pain, 1(3.33%) had severe pain.

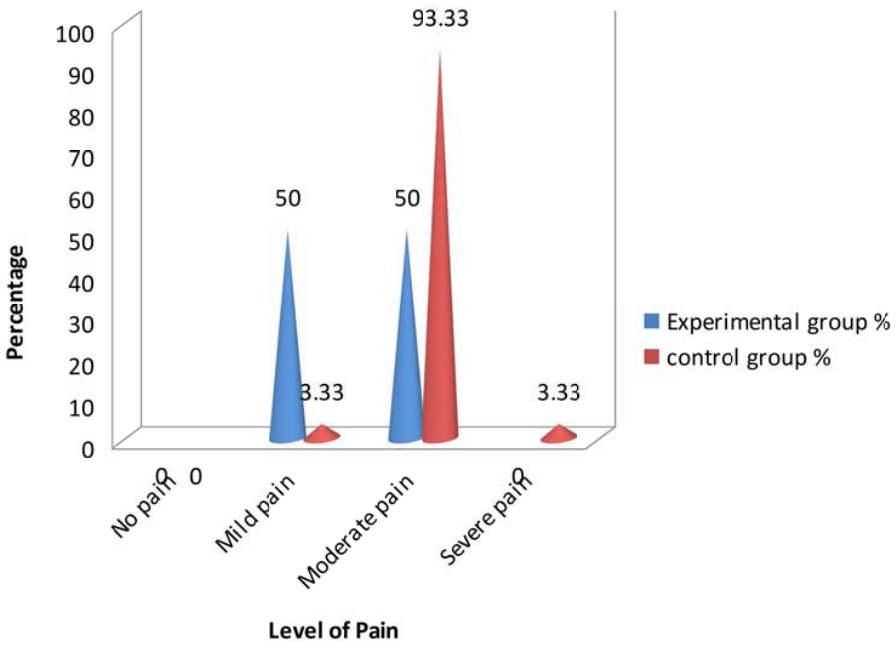

Fig4-:Percentage distribution of adolescent girls according to the level of pain soon after intervention in Experimental group and without intervention in Control group

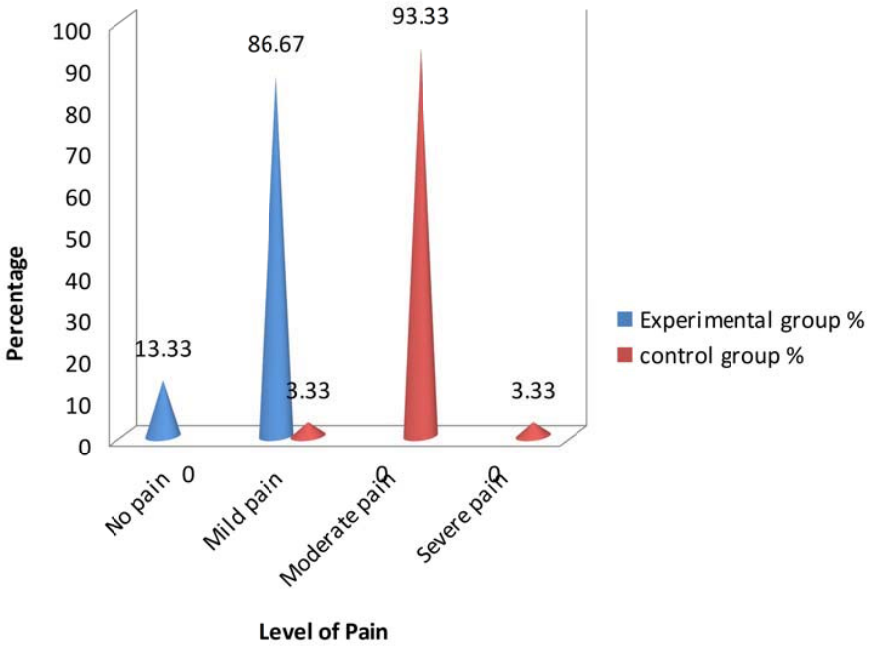
100
90
80
70
60
50
40
30
20
10
0
Percentage
86.67
93.33
13.33
3.33
3.33
0
0
0
No pain
Mild pain
Moderate pain
Severe pain
Level of Pain
Experimental group %
control group %

Fig-5:Percentage distribution of adolescent girls according to the level of pain 30 minutes after intervention in Experimental and without intervention in Control group

Table 5: Frequency and percentage distribution of adolescent girls according to the level of dysmenorrhoea symptoms in experimental group and without intervention in control group.

n-60

S.No	Level of dysmenorrhoea symptoms	Experimental group n=30				Control group n=30			
		Soon after		After 30 minutes		Soon after		After 30 minutes	
		f	%	f	%	f	%	F	%
1	Mild	16	53.34	29	96.67	4	13.33	2	6.67
2	Moderate	13	43.33	1	3.33	23	76.67	20	66.67
3	Severe	**1**	3.33	**0**	**0**	3	10	8	26.66

Table 5 represents soon after the intervention, in Experimental group 16(53.34%) had mild symptoms, 13(43.33%) had moderate symptoms, and 1(3.33%) had severe symptoms. In control group 4(13.33%) had mild symptoms, 23(76.67%) had moderate pain, and 3(10%) had severe pain. In Experimental group30 minutes after the intervention, 29(96.67%) had mild symptoms, 1(3.33%) had moderate symptoms, and none of them had severe symptoms . In control group 2(6.67%) had mild Symptoms, 20(66.67%) had moderate symptoms, 8(26.66%) had severe symptoms.

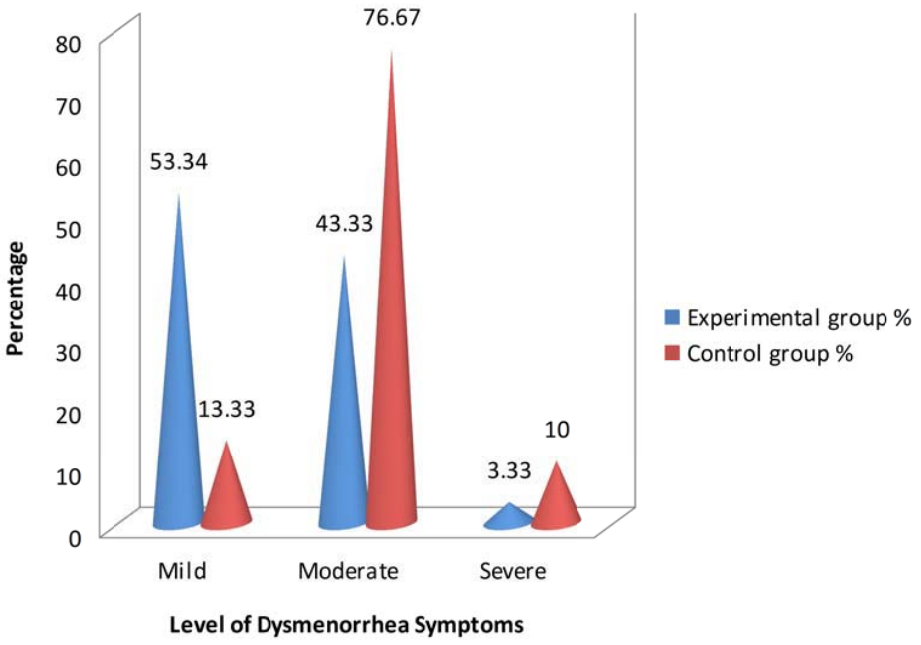

Fig-6: Percentage Distribution of adolescent girls according to the level of dysmenorrhea symptoms soon after intervention in Experimental and Control group

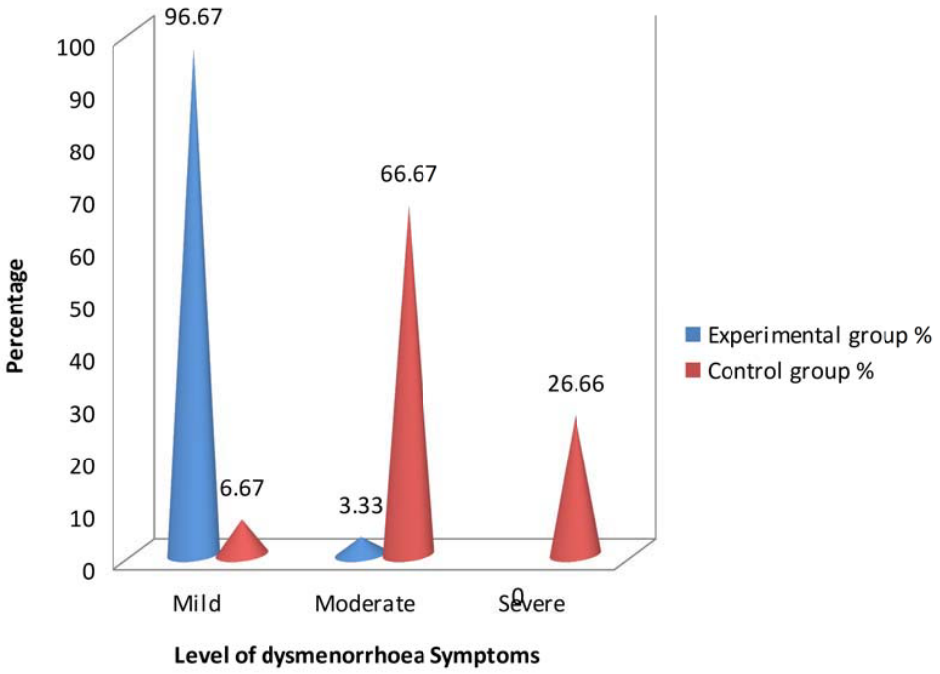

Fig-7: Percentage Distribution of adolescent girls according to the level of dysmenorrhoea symptoms 30 minutes after intervention in Experimental group and without intervention in Control group.

SECTION-C

Comparison of pre and post test level of pain among experimental group and control group.

Table- 6: Mean, standard deviation and Paired t test value of pre test and post test level of pain in experimental group and control group.

S. No	Group	Mean	Mean Difference	Standard deviation	Paired t test value	Table value
1.	**Experimental group** (n=30) Pre test Post test (soon after)	5.4 3.7	1.7	1.445 1.345	4.719	29df, 2.042
2.	**Experimental group** (n=30) Pre test Post test(30 minutes after)	5.4 1.56	3.84	1.445 0.9893	12.02	29df, 2.042
3.	**Control group** (n=30) Pre test Post test(soon after)	4.93 5.2	0.27	1.20 1.36	0.56	29df, 2.05
4.	**Control group** (n=30) Pre test Post test(30minutes after)	4.93 5.13	0.20	1.20 1.32	0.43	29df, 2.05

Table value t=2.04.*significant at p<0.05 level.

Table 6 represents that soon after intervention in experimental group, the mean score level of pain was 5.4 in pre test and 3.7 in post test. Calculated paired t test value was 4.719 was found to be more than the table value. This data had indicated that there was significant reduction of pain score, hence research hypothesis was accepted. In control group, the mean score was 4.93 in pre test and 5.20 in post test. The paired t test value was 0.56 which is not significant at $p<0.05$

In experimental group 30 minutes after intervention, the mean score level of pain was 5.4 in pre test and 1.56 in post test. . Calculated paired t test value 12.02 was found to be more than the table value. This data had indicated that there was significant reduction of pain score, hence research hypothesis was accepted . In control group, the mean score was 4.93 in pre test and 5.13 in post test. The paired t test value was 0.43 which is not significant at $p<0.05$. The whole data had denoted that Acupressure was highly effective in reducing pain level of dysmenorrhoea.

Table- 7: Mean, standard deviation and Paired t test value of pre test and post test level of dysmenorrhea symptoms in experimental group and control group.

n-60

S. No	Group	Mean	Mean Difference	Standard deviation	Paired t test value	Table value
1.	**Experimental group** (n=30) Pre test Post test(soon after)	33.5 24.2	9.3	12.65 9.165	3.393*	29df, 2.042, Significant
2.	**Experimental group** (n=30) Pre test Post test(30minutes after)	33.5 13.3	20.2	12.65 5.531	8.5059*	29df, 2.042, Significant
3.	**Control group** (n=30) Pre test Post test(soon after)	35.46 36.8	1.34	9.76 9.61	0.53	29df, 2.042, NS
4..	**Control group** (n=30) Pre test Post test(30minute after)	35.46 37.96	2.5	9.76 9.83	0.99	29df, 2.042, NS

Table value t=2.042.*significant at p<0.05 level.

Table 7 represents that soon after intervention in experimental group, the mean score level of dysmenorrhea symptoms was 33.5 in pre test and 24.2 in post test. Calculated paired t test value 3.393 was found to be more than the table value. This data had indicated that there was significant reduction of dysmenorrhoea symptoms score, hence research hypothesis was accepted. In control group, the mean score was

35.46 in pre test and 36.8 in post test. The estimated paired t test value was 0.53 which is not significant at $p<0.05$

In experimental group 30 minutes after intervention, the mean score level of dysmenorrhea symptoms was 33.5 in pre test and 13.3 in post test. Calculated paired t test value 8.82 was found to be more than the table value. This data had indicated that there was significant reduction of dysmenorrhoea symptoms score, hence research hypothesis was accepted. In control group, the mean score was 35.46 in pre test and 37.96 in post test. The estimated paired t test value was 0.99 which is not significant at $p<0.05$. The whole data had denoted that Acupressure was highly effective in reducing dysmenorrhoea symptoms.

Comparison of pre test level of pain among experimental group and control group.

Table -8: Mean, standard deviation and Unpaired t test value of pre test level of pain in experimental group and control group.

n=60

S.No	**Group**	**Mean**	Mean difference	**Standard deviation**	**Unpaired t test value**
1.	Experimental group (n=30)	5.4	0.47	1.445	1.36*
2.	Control	4.93		1.208	

	group (n=30)				

Table value t=2,*significant at p<0.05 level.

Table 8 represents that in experimental group , the mean pre test mean score was 5.4, in control group the mean pre test score was 4.93. The unpaired t test value was 1.36 which is not significant at p<0.05 level of significance. There is no difference between the groups, that is both group are same.

Table -9: Mean, standard deviation and Unpaired t test value of pre test level of dysmenorrhea symptoms in experimental group and control group.

n=60

S.No	**Group**	**Mean**	**Mean Difference**	**Standard deviation**	**Unpaired t test value**
1.	Experimental group (n=30)	33.5	1.96	10.75	0.73*
2.	Control group (n=30)	35.46		9.76.	

Table value t=2,*significant at p<0.05 level.

Table 9 represents that level of dysmenorrhoea symptoms in experimental group , the mean pre test score was 33.5. In control group, the mean pre test score was 35.46. The unpaired t test value was 0.73 which is not significant at $p<0.05$ level of significance. .That is there is no different between the two groups

Comparison of post test level of pain among experimental group and control group

Table -10: Mean, standard deviation and Unpaired t test value of post test level of pain soon after after intervention in experimental group and without intervention in control group.

n=60

S.No	Group	Mean	Mean Difference	Standard deviation	Unpaired t test value
1.	Experimental group (n=30)	3.7	1.5	1.34	4.23*

2.	Control group (n=30)	5.20		1.36	

Table value t=2,*significant at p<0.05 level.

Table 10 represents that soon after intervention in experimental group , the mean post test score was 3.7. In control group ,the mean post test score was 5.20. Calculated unpaired t test value 4.23was found to be more than the table value. This data had indicated that there was significant reduction of pain score, hence research hypothesis was accepted. The whole data had denoted that Acupressure was highly effective in reducing level of pain .

Table -11: Mean, standard deviation and Unpaired t test value of post test level of pain 30 minutes after intervention in experimental group and without intervention in control group.

n=60

S.No	Group	Mean	Mean Difference	Standard deviation	Unpaired t test value	Table value
1.	Experimental group (n=30)	1.56	3.44	0.9893	11.74*	58df, 2
2.	Control group (n=30)	5.13		1.32		

Table value t=2,*significant at p<0.05 level.

Table 11 represents that 30 minutes after intervention in experimental group , the mean post test score was 1.56. In control group ,the mean post test score was 5.13. Calculated unpaired t test value 11.74 was found to be more than the table value. This data had indicated that there was significant reduction of pain score, hence research hypothesis was accepted. The whole data had denoted that Acupressure was highly effective in reducing level of pain .

Comparison of post test dysmenorrhea symptoms among experimental group and control group

Table -12: Mean, standard deviation and Unpaired t test value of post test level of dysmenorrhea symptoms soon after intervention in experimental group and without intervention in control group

n=60

S. No	**Group**	**Mean**	**Mean difference**	**Standard deviation**	**Unpaired t test value**	**Table value**
1.	Experimental group (n=30)	24.2		9.16	5.12*	58df,2, Significant

2.	Control group (n=30)	36.8	12.6	9.61		

Table value t=2,*significant at p<0.05 level.

Table 12 represents that soon after intervention in experimental group the mean post test score was 24.2. In control group, the mean post test score was 36.8. Calculated unpaired t test value 5.12 was found to be more than the table value. This data had indicated that there was significant reduction of dysmenorrhoea symptoms score, hence research hypothesis was accepted. The whole data had denoted that Acupressure was highly effective in reducing dysmenorrhoea symptoms.

Table -13: Mean, standard deviation and Unpaired t test value of post test level of dysmenorrhea symptoms 30 minutes after intervention. in experimental group and without intervention in control group

n=60

S. No	**Group**	**Mean**	**Mean difference**	**Standard deviation**	**Unpaired t test value**	**Table value**
1.	Experimental group (n=30)	13.3		4.69		
2.	Control group (n=30)	37.96	24.66	9.83	12.20^{*}	^{58df,2}

Table value t=2,*significant at p<0.05 level.

Table 13 represents that 30 minutes after intervention in experimental group , the mean post test score was 13.3. In control group, the mean post test score was 37.96.

Calculated un paired t test value 12.20was found to be more than the table value. This data had indicated that there was significant reduction of dysmenorrhoea symptoms score, hence research hypothesis was accepted. The whole data had denoted that Acupressure was highly effective in reducing dysmenorrhoea symptoms.

Section C:

Association between the pre test level of pain among adolescent girls in experimental group with selected demographic variables.

Table 14: Association between level of pain with selected demographic variables in experimental group.

n-60

S.No	Demographic variables	Level of pain				X^2	Table value At 5% level
		mild	moderate	severe	Total		
1.	**Age** a)13-14 years b) 15-16 years	 1 2	 8 12	 2 5	 11 19	0.55	2df,5.99,NS
2.	**Age at menarche** a)10-13 years b)14-16 years	 1 2	 12 8	 5 2	 18 12	1.55	2df,5.99,NS

3.	**Type of family** **a)** Nuclear b)Joint	2 1	13 7	6 1	21 9	1.07	2df,5.99,NS
4.	**Duration of menstruation** a) < 3 days d) 3-6 days e) > 6 days	1 2 0	1 15 4	0 2 5	2 19 9	11.09	4df,9.49,Significant
5.	**Family history of dysmennorhoea** a) No history b) Yes	0 3	6 14	1 6	7 23	1.73	2df,5.99

Table 14 shows that in experimental group, for level of pain on considering the age, chi square value was 0.055 and the table value at degree of freedom two was 5.99. Considering the age at menarche, chi square value was 1.55 and the table value at degree of freedom two was 5.99 .As per type of family, chi square value was 1.076 and the table value at degree of freedom two was 5.99. As per duration of menstruation the chi square value was 11.09 at degree of freedom four was 9.49. as per family history of dysmenorrhoea the chi square value was 1.73 at degree of freedom two was 5.99.

Table reveals that there is no significant association between the pre test level of pain among adolescent girls in experimental group with selected demographic variables such as age, age at menarche, type of family, , and family history of dysmenorrhoea at $p<.05$ level except duration of menstruation.

Table 15: Association between level of dysmennorhoea symptoms with selected demographic variables in experimental group

n=30

S.No	Demographic variables	Level of Dysmenorrhoea symptoms				χ^2	Table value
		Mild	Moderate	Severe	Total		
1.	**Age** a) 13-14 years b) 15-16 years	4 4	5 11	2 4	11 19	0.83	2df,5.99,NS
2.	**Age at menarche** a) 10-13 years b) 14-16 years	3 5	11 5	4 2	18 12	2.30	2df,5.99, NS

3.	**Type of family** **a)** Nuclear **b)** Joint	5 3	11 5	5 1	21 9	0.73	2df,5.99, NS
4.	**Duration of menstruation** a) < 3 days b) 3-6 days c) > 6 days	1 6 1	1 10 5	0 3 3	2 19 9	11.99	4df,9..49, Significant
5.	**Family history of dysmennorhoea** a) No history b)Yes	2 6	5 11	0 6	7 23	2.39	2df,5.99, NS

Table 15 shows that in experimental group, for level of dysmenorrhoea symptoms considering the age, chi square value was 0.83 and the table value at degree of freedom two was 5.99. Considering the age at menarche, chi square value was 2.30 and the table value at degree of freedom two was 5.99 As per type of family, chi square value was 1.73 and the table value at degree of freedom two was 5.99. As per duration of menstruation the chi square value was 11.99 at degree of freedom four was 9.49. As per family history of dysmenorrhoea the chi square value was 2.39919 at degree of freedom two was 5.99.

Table 15 reveals that there is no significant association between the pre test level of dysmenorrhoea symptoms among adolescent girls in experimental group with selected demographic variables such as age, age at menarche, type of family, and family history of dysmenorrhoea at $p<.05$ level except duration of menstruation.

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CHAPTER V

DISCUSSION

This study was conducted to assess the effectiveness of acupressure on relief of dysmenorrhoea symptoms among adolescent girls in selected school at Nagercoil. The findings of the study have been discussed based on the objectives of the study .

Description of demographic variables among experimental group subjects:

The distribution of adolescent girls, according to age, 11(36.67%) of them belongs to the age group between 13 and 14 years, 19(63.33%) of them belongs to the age group between 15 and 16 years. Distribution of adolescent girls according to their age at menarche shows that 18(60%) of them between 10 and13 years, 12(40%) of them between 14 and 16 years. Distribution of adolescent girls according to their Type of family 21(70%) were belongs to nuclear family, 9(30%) were belongs to joint

family. Distribution of adolescent girls according to their duration of menstruation in experimental group, 2(6.67%) had less than 3days, 19(63.33%) had 3-6 days and 9(30%) had >6days. Distribution of adolescent girls according to their family history of dysmenorrhoea 7(23.33%) had no family history, 23(76.67%) %) had family history of dysmenorrhoea .

Description of demographic variables among control group subjects:

Distribution of adolescent girls, according to age 10(33.33%) of them belongs to the age group between 13 and 14 years, 20(66.67%) of them belongs to the age group between 15 and 16 years. Distribution of adolescent girls according to their age at menarche 17(56.67%) of them between 10 and13 years, 13(43.33%) of them between 14 and 16 years. Distribution of adolescent girls according to their Type of family 20 (66.67%) were belongs to nuclear family and 10(33.33%) were belongs to joint family. Distribution of adolescent girls according to their duration of menstruation , 2(6.67%) had less than 3days, 18(60%) had 3-5 days and 10(33.33%) had >6days. Distribution of adolescent girls according to their family history of dysmenorrhoea 8(26.67%) had no family history, 22(73.33%) had family history of dysmenorrhoea

Objective 1

The first objective of the study is to assess the pretest level of pain and dysmenorrhoea symptoms among adolescent girls in Experimental and Control group.

Before the intervention, in expermemtal group 3(10%) had mild pain, 20(66.67%) had moderate pain, 7(23.33%) had severe pain and none of them had no pain. In control group 4(13.33%) had mild pain, 20(66.67%) had moderate pain, 6(20%) had severe pain and none of them had no pain.

In Experimental group before the intervention, 8(26.67%) had mild symptoms, 16(53.33%) had moderate symptoms, and 6(20%) had severe symptoms. In control group 9(30%) had mild symptoms15(50%%) had moderate symptoms, and 6(20%) had severe symptoms.

Soon after the intervention, in Experimental group 15(50%) had mild pain, 15(50%) had moderate pain, and none of them had severe pain . In control group 1(3.33%) had mild pain, 27(90%) had moderate pain, 2(6.67%) had severe pain. In Experimental group 30 minutes after the intervention 4(13.33%) had no pain, 26(86.67%) had mild pain, and none of them had moderate, severe pain . In control group 1(3.33%) had mild pain, 28(93.33%) had moderate pain, 1(3.33%) had severe pain.

Soon after the intervention, in Experimental group 16(53.34%) had mild symptoms, 13(43.33%) had moderate symptoms, and 1(3.33%) had severe symptoms. In control group 4(13.33%) had mild symptoms, 23(76.67%) had moderate pain, and 3(10%) had severe pain. In Experimental group30 minutes after the intervention, 29(96.67%) had mild symptoms, 1(3.33%) had moderate symptoms, and none of them had severe symptoms . In control group 2(6.67%) had mild Symptoms, 20(66.67%) had moderate symptoms, 8(26.66%) had severe symptoms.

Kiran B et al (2012) found that prevalence of dysmenorrhea in Chennai, found to be 76.30% .57.1% had severe and 19.20% had mild dysmenorrhoea. In Bangalore 73.19% had severe and 26.80% had mild dysmenorrhoea.

Nidhi Sharma , Benjamin Sagayaraj M., **Balamma Sujatha (2013)** found that severe dysmenorrhoea was present in 9.5% of girls while 24.6 % and 36.5% experienced moderate and mild dysmenorrhoea respectively. Although 70.4% of girls

experienced dysmenorrhoea only 3.6 % used pharmacotherapy due to fear of side effects.

Chaudhuri, A et al(2012) research finding source that 52.3% had moderate pain and 25% cases had severe pain. Menstrual distress questionnaire scores showed mood swings, irritability, difficulty in concentrating, poor school performances were common problems. 8.6% of the study population went for physician consultation, 15.6% took painkillers, 12.5% used to hot water bottles, 3.1% practiced exercise, 26.6% practiced dietary modifications for reducing pain.

Nayana S. George , Sangeetha Priyadarshini & Sheela Shetty(2013) research shows that the prevalence of dysmenorrhoea in adolescent girls was found to be 146(62.70%). Out of 233 samples 28(12%) had mild pain,77(33%) had moderate pain and 41(17.6%) had severe pain during menstruation. Tiredness 110(75.34%), back pain 106(72.60%) and irritability 97(66.43%) were the most common symptoms associated with dysmenorrhoea.

Objective 2

To compare the level of pain and dysmenorrhoea symptoms before and after the application of acupressure in experimental group and without intervention in control group.

Soon after intervention in experimental group, the mean score level of pain was 5.4 in pre test and 3.7 in post test. Calculated paired t test value was 4.719 was found to be more than the table value. This data had indicated that there was significant reduction of pain score. In control group, the mean score was 4.93 in pre test and 5.20 in post test. The paired t test value was 0.56 which is not significant at $p<0.05$

In experimental group 30 minutes after intervention, the mean score level of pain was 5.4 in pre test and 1.56 in post test. . Calculated paired t test value 12.02 was

found to be more than the table value. This data had indicated that there was significant reduction of pain score. In control group, the mean score was 4.93 in pre test and 5.13 in post test. The paired t test value was 0.43 which is not significant at $p<0.05$. The whole data had denoted that Acupressure was highly effective in reducing pain level of dysmenorrhoea.

Soon after intervention in experimental group, the mean score level of dysmenorrhea symptoms was 33.5 in pre test and 24.2 in post test. Calculated paired t test value 3.393 was found to be more than the table value. This data had indicated that there was significant reduction of dysmenorrhoea symptoms score, hence research hypothesis was accepted. In control group, the mean score was 35.46 in pre test and 36.8 in post test. The estimated paired t test value was 0.53 which is not significant at $p<0.05$

In experimental group 30 minutes after intervention, the mean score level of dysmenorrhea symptoms was 33.5 in pre test and 13.3 in post test. Calculated paired t test value 8.82 was found to be more than the table value. This data had indicated that there was significant reduction of dysmenorrhoea symptoms score. In control group, the mean score was 35.46 in pre test and 37.96 in post test. The estimated paired t test value was 0.99 which is not significant at $p<0.05$. The whole data had denoted that Acupressure was highly effective in reducing dysmenorrhoea symptoms. that in experimental group , the mean pre test mean score was 5.4, in control group the mean pre test score was 4.93. The unpaired t test value was 1.36 which is not significant at $p<0.05$ level of significance. There is no difference between the groups. That is both group are same.

Level of dysmenorrhoea symptoms in experimental group , the mean pre test score was 33.5. In control group, the mean pre test score was 35.46. The unpaired t test value was 0.73 which is not significant at $p<0.05$ level of significance. .That is there is no different between the two groups. soon after intervention in experimental group , the mean post test score was 3.7. In control group ,the mean post test score was 5.20. Calculated unpaired t test value 4.23was found to be more than the table value. This data had indicated that there was significant reduction of pain score. The whole data had denoted that Acupressure was highly effective in reducing level of pain .

30 minutes after intervention in experimental group , the mean post test score was 1.56. In control group ,the mean post test score was 5.13. Calculated unpaired t test value 11.74 was found to be more than the table value. This data had indicated that there was significant reduction of pain score, hence research hypothesis was accepted. The whole data had denoted that Acupressure was highly effective in reducing level of pain .

Soon after intervention in experimental group , the mean post test score was 24.2. In control group ,the mean post test score was 36.8. . Calculated unpaired t test value 5.12 was found to be more than the table value. This data had indicated that there was significant reduction of dysmenorrhoea symptoms score. The whole data had denoted that Acupressure was highly effective in reducing dysmenorrhoea symptoms.

30 minutes after intervention in experimental group , the mean post test score was 13.3. In control group, the mean post test score was 37.96. Calculated un paired t test value 12.20was found to be more than the table value. This data had indicated that there was significant reduction of dysmenorrhoea symptoms score. The whole data had denoted that Acupressure was highly effective in reducing dysmenorrhoea symptoms.

Sujatha Dakhe (2012), Findings of the study revealed that there was a significant difference in pain intensity assessed by Numerical Pain Intensity Scale of Group I and Group II at t58 = .002 at the level of $p<0.001$. Hence, it was inferred that acupressure therapy (SP6 point) was more effective in reducing the intensity of dysmenorrhoea.

Karthika.S (2011) research finding source that the mean pre-test pain score of study group was 5.23 and for control group 5.9 and there was a significant difference in control and study group observed before intervention showed t=2.339 ($p<0.01$) and after 2hrs of intervention t=13.695 ($p<0.01$).

Aswini.D.et.al.,(2011), The study results revealed that the symptoms of dysmenorrhoea score in pretest was higher than the mean post test score and paired 't'value was 11.19 at $p<0.05$ level of significance. Mean difference was 4.38.

Objective 3

To determine the association of pretest dysmenorrhoea symptoms with selected demographic variables in experimental group.

In experimental group, for level of pain on considering the age, chi square value was 0.055 and the table value at degree of freedom two was 5.99. Considering the age at menarche, chi square value was 1.55 and the table value at degree of freedom two was 5.99 .As per type of family, chi square value was 1.076 and the table value at degree of freedom two was 5.99. As per duration of menstruation the chi square value was 11.09 at degree of freedom four was 9.49. as per family history of dysmenorrhoea the chi square value was 1.73 at degree of freedom two was 5.99. It shows that there is no significant association between the pre test level of pain among adolescent girls in experimental group with selected demographic variables such as age, age at menarche,

type of family, , and family history of dysmenorrhoea at p<.05 level except duration of menstruation.

In experimental group, for level of dysmenorrhoea symptoms considering the age, chi square value was 0.83 and the table value at degree of freedom two was 5.99. Considering the age at menarche, chi square value was 2.30 and the table value at degree of freedom two was 5.99 As per type of family, chi square value was 1.73 and the table value at degree of freedom two was 5.99. As per duration of menstruation the chi square value was 11.99 at degree of freedom four was 9.49. As per family history of dysmenorrhoea the chi square value was 2.39919 at degree of freedom two was 5.99.

It shows that there is no significant association between the pre test level of dysmenorrhoea symptoms among adolescent girls in experimental group with selected demographic variables such as age, age at menarche, type of family, and family history of dysmenorrhoea at p<.05 level except duration of menstruation.

Nayana S. George , Sangeetha Priyadarshini & Sheela Shetty(2013) study finding source A positive association was found between dysmenorrhoea and family history.. Majority of the adolescent girls 146(62.7%) attained menarche at the age of 12-13 years. Study showed an association between family history and dysmenorrhoea (Z=16.673,p-value=0.001) and there is no association between age in years, onset of menarche, duration of menstrual flow, dietary pattern and family history of dysmenorrhoea.

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CHAPTER-VI

SUMMARY, CONCLUSION, NURSING IMPLICATIONS, LIMITATIONS, RECOMMENDATIONS

This chapter dealt with the summary of the study, conclusion drawn, nursing implications, limitations and recommendations of the study.

Summary

This study was undertaken to assess the effectiveness of Acupressure on relief of dysmenorrheal symptoms among adolescent girls. Quantitative research approach with Time series design was adopted. This study was conducted in LMPC higher secondary school, Puthalam and L.M.S Higher secondary School, Zionpuram. By using convenient sampling technique 60 samples were selected, 30 samples in experimental group and 30 samples in control group. The data was collected and analyzed by using

descriptive and inferential statistics. The level of significance was assessed by $p<0.05$ to test the hypotheses.

Findings of the study

The major findings of the study was summarised as follows.

- The distribution of adolescent girls, according to age in experimental group, 11(36.67%) of them belongs to the age group between 13 and 14 years, 19(63.33%) of them belongs to the age group between 15 and 16 years. Distribution of adolescent girls according to their age at menarche shows that in experimental group, 18(60%) of them between 10 and13 years, 12(40%) of them between 14 and 16 years. Distribution of adolescent girls according to their Type of family in experimental group, 21(70%) were belongs to nuclear family, 9(30%) were belongs to joint family. Distribution of adolescent girls according to their duration of menstruation in experimental group, 2(6.67%) had less than 3days, 19(63.33%) had 3-6 days and 9(30%) had >6days. Distribution of adolescent girls according to their family history of dysmenorrhoea in experimental group 7(23.33%) had no family history, 23(76.67%) %) had family history of dysmenorrhoea .
- Distribution of adolescent girls, according to age in control group, 10(33.33%) of them belongs to the age group between 13 and 14 years, 20(66.67%) of them belongs to the age group between 15 and 16 years. Distribution of adolescent girls according to their age at menarche in control group 17(56.67%) of them between 10 and13 years, 13(43.33%) of them between 14 and 16 years. Distribution of adolescent girls according to their Type of family in control group 20 (66.67%) were belongs to nuclear family and 10(33.33%) were belongs to joint family. Distribution of adolescent girls according to their duration of menstruation in control group, 2(6.67%) had less than 3days,

18(60%) had 3-5 days and 10(33.33%) had >6days. Distribution of adolescent girls according to their family history of dysmenorrhoea in Control group,8(26.67%) had no family history, 22(73.33%) had family history of dysmenorrhoea

- Before the intervention, in expermemtal group 3(10%) had mild pain, 20(66.67%) had moderate pain, 7(23.33%) had severe pain and none of them had no pain. In control group 4(13.33%) had mild pain, 20(66.67%) had moderate pain, 6(20%) had severe pain and none of them had no pain.
- In Experimental group before the intervention, 8(26.67%) had mild symptoms, 16(53.33%) had moderate symptoms, and 6(20%) had severe symptoms. In control group 9(30%) had mild symptoms15(50%%) had moderate symptoms, and 6(20%) had severe symptoms.
- Soon after the intervention, in Experimental group 15(50%) had mild pain, 15(50%) had moderate pain, and none of them had severe pain . In control group 1(3.33%) had mild pain, 27(90%) had moderate pain, 2(6.67%) had severe pain. In Experimental group 30 minutes after the intervention 4(13.33%) had no pain, 26(86.67%) had mild pain, and none of them had moderate, severe pain . In control group 1(3.33%) had mild pain, 28(93.33%) had moderate pain, 1(3.33%) had severe pain.
- Soon after the intervention, in Experimental group 16(53.34%) had mild symptoms, 13(43.33%) had moderate symptoms, and 1(3.33%) had severe symptoms. In control group 4(13.33%) had mild symptoms, 23(76.67%) had moderate pain, and 3(10%) had severe pain. In Experimental group30 minutes after the intervention, 29(96.67%) had mild symptoms, 1(3.33%) had moderate symptoms, and none of them had severe symptoms . In control group 2(6.67%) had mild Symptoms, 20(66.67%) had moderate symptoms, 8(26.66%) had severe symptoms.

- Soon after intervention in experimental group, the mean score level of pain was 5.4 in pre test and 3.7 in post test. Calculated paired t test value was 4.719 was found to be more than the table value. This data had indicated that there was significant reduction of pain score, hence research hypothesis was accepted. In control group, the mean score was 4.93 in pre test and 5.20 in post test. The paired t test value was 0.56 which is not significant at $p<0.05$
- In experimental group 30 minutes after intervention, the mean score level of pain was 5.4 in pre test and 1.56 in post test. . Calculated paired t test value 12.02 was found to be more than the table value. This data had indicated that there was significant reduction of pain score, hence research hypothesis was accepted . In control group, the mean score was 4.93 in pre test and 5.13 in post test. The paired t test value was 0.43 which is not significant at $p<0.05$. The whole data had denoted that Acupressure was highly effective in reducing pain level of dysmenorrhoea.
- Soon after intervention in experimental group, the mean score level of dysmenorrhea symptoms was 33.5 in pre test and 24.2 in post test. Calculated paired t test value 3.393 was found to be more than the table value. This data had indicated that there was significant reduction of dysmenorrhoea symptoms score, hence research hypothesis was accepted. In control group, the mean score was 35.46 in pre test and 36.8 in post test. The estimated paired t test value was 0.53 which is not significant at $p<0.05$
- In experimental group 30 minutes after intervention, the mean score level of dysmenorrhea symptoms was 33.5 in pre test and 13.3 in post test. Calculated paired t test value 8.82 was found to be more than the table value. This data had indicated that there was significant reduction of dysmenorrhoea symptoms score, hence research hypothesis was accepted. In control group, the mean score was 35.46 in pre test and 37.96 in post test. The estimated paired t test value

was 0.99 which is not significant at $p<0.05$. The whole data had denoted that Acupressure was highly effective in reducing dysmenorrhoea symptoms. that in experimental group , the mean pre test mean score was 5.4, in control group the mean pre test score was 4.93. The unpaired t test value was 1.36 which is not significant at $p<0.05$ level of significance. There is no difference between the groups.That is both group are same.

- Level of dysmenorrhoea symptoms in experimental group , the mean pre test score was 33.5. In control group, the mean pre test score was 35.46. The unpaired t test value was 0.73 which is not significant at $p<0.05$ level of significance. .That is there is no different between the two groups. soon after intervention in experimental group , the mean post test score was 3.7. In control group ,the mean post test score was 5.20. Calculated unpaired t test value 4.23was found to be more than the table value. This data had indicated that there was significant reduction of pain score, hence research hypothesis was accepted. The whole data had denoted that Acupressure was highly effective in reducing level of pain .
- 30 minutes after intervention in experimental group , the mean post test score was 1.56. In control group ,the mean post test score was 5.13. Calculated unpaired t test value 11.74 was found to be more than the table value. This data had indicated that there was significant reduction of pain score, hence research hypothesis was accepted. The whole data had denoted that Acupressure was highly effective in reducing level of pain .
- Soon after intervention in experimental group , the mean post test score was 24.2. In control group ,the mean post test score was 36.8. . Calculated unpaired t test value 5.12 was found to be more than the table value. This data had indicated that there was significant reduction of dysmenorrhoea symptoms

score, hence research hypothesis was accepted. The whole data had denoted that Acupressure was highly effective in reducing dysmenorrhoea symptoms.

- 30 minutes after intervention in experimental group , the mean post test score was 13.3. In control group, the mean post test score was 37.96. Calculated un paired t test value 12.20was found to be more than the table value. This data had indicated that there was significant reduction of dysmenorrhoea symptoms score, hence research hypothesis was accepted. The whole data had denoted that Acupressure was highly effective in reducing dysmenorrhoea symptoms.
- There is no significant association between the pre test level of pain among adolescent girls in experimental group with selected demographic variables such as age, age at menarche, type of family, , and family history of dysmenorrhoea at $p<.05$ level except duration of menstruation.

Conclusion

The study was to assess the effectiveness of Acupressure on relief of dysmenorrheal symptoms among adolescent girls in selected schools at Nagercoil. In experimental group soon after intervention, the mean post test score of level of pain was 3.7. In control group ,the mean post test score was 5.2. Calculated unpaired t test value 4.36 was found to be more than the table value .In experimental group 30 minutes after intervention, the mean post test score was 1.56. In control group ,the mean post test score was 5.13. Calculated unpaired t test value . 11.74 was found to be more than the table value. From the results of the study, it was concluded that Acupressure effective in reducing dysmenorrhea. Dysmenorrhea is a common problem of adolescent girls. Hence the researcher has given Acupressure is easy to follow and cost effective. Adolescent girls were very interesting while practicing Acupressure. Acupressure help to reduce dysmenorrhea and improve the health related quality of life among adolescent girls.

Nursing Implications

The researcher has derived the following implications from the study results, which are of vital concern to the field of nursing service, nursing administration, nursing education and nursing research.

Nursing service

Nursing personnel should develop in-depth knowledge about primary dysmenorrhea, its impact on quality of life of female adolescents. Nurses should be knowledgeable regarding the benefits of Acupressure on dysmenorrhea. Child health nurses should encourage the adolescent girls to practice Acupressure in reducing dysmenorrhea.

Nursing education

Nurse educators should be equipped with knowledge regarding the techniques of Acupressure. Conduct workshops or conferences for students regarding self-management of dysmenorrhea. Strengthen the curriculum of nurses to extend their knowledge and skills in various modalities of therapies.

Nursing administration

Nurse administrator should assist in implementing public health awareness campaign in schools aimed at reducing dysmenorrhea discomfort. Nurse administrators should be able to make judgments as to which intervention helps in reducing dysmenorrhea. Public information programmes should be designed by nurses to encourage Acupressure among adolescent girls to reduce dysmenorrhea.

Nursing research

Nursing research is to be done to find out the various self management methods to reduce dysmenorrhea. The findings of the study would help to expand the scientific body of professional knowledge upon which their research can be conducted. Large scale study should be conducted on Acupressure on relief of dysmenorrheal symptoms and disseminate the findings through conferences, seminars and publishing in nursing journals.

Limitations

Since the study conducted at the co-educational school the investigator had a difficulties in collecting study samples .

Recommendations

- A study can be conducted on large samples may help to draw conclusions that are more definite and generalize to a larger population.
- A comparative study could be conducted to evaluate the effectiveness of Acupressre with other non- pharmacological measures such as abdominal massage for dysmenorrhea.
- A study can be conducted to evaluate the effectiveness of Acupressure for dysmenorrhea among women in all reproductive age group.
- A study can be undertaken among teenage girls residing in hostel.
- A study can be conducted to compare the Acupressre on dysmenorrhea for three consecutive menstrual cycles.

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APPENDIX-I

Copy of letter seeking permission to conduct the research study in LMS Higher Secondary School, Zionpuram

From

M. Asifa Prim Malar, II M.Sc., Nursing

Nehru Nursing College,

Vallioor, Tirunelveli

To

The Headmistress

LMS Higher Secondary School, Zionpuram

Through

The Principal,

Nehru Nursing College, Vallioor.

Sub: Requisition for conducting the research study

Respected Sir/Madam,

I am doing M.Sc Nsg II year in Nehru Nursing College at vallioor as a part of my curriculum requirement under The Tamilnadu Dr. MGR Medical university is to conduct research. I have selected ”A study to assess the effectiveness of acupressure on relief of dysmenorrhoea symptoms among adolescent girls in selected school at Nagercoil” .

Kindly I request you to grant me permission to conduct this study. I assure that I will abide the rules of the institution and information collected from the study

Participants will not be disclosed. Thanking you,

Place: Vallioor, Yours faithfully,

Date: M. Asifa Prim Malar,

APPENDIX-II

Copy of letter seeking permission to conduct the research study in LMPC Higher Secondary School, Puthalam

From

M. Asifa Prim Malar, II M.Sc., Nursing

Nehru Nursing College,

Vallioor, Tirunelveli

To

The Headmistress

LMPC Higher Secondary School, Puthalam

Through

The Principal,

Nehru Nursing College, Vallioor.

Sub: Requisition for conducting the research study

Respected Sir/Madam,

I am doing M.Sc Nsg II year in Nehru Nursing College at vallioor as a part of my curriculum requirement under The Tamilnadu Dr. MGR Medical university is to conduct research. I have selected ”A study to assess the effectiveness of acupressure on relief of dysmenorrhoea symptoms among adolescent girls in selected school at Nagercoil” .

Kindly I request you to grant me permission to conduct this study. I assure that I will abide the rules of the institution and information collected from the study

Participants will not be disclosed. Thanking you,

Place: Vallioor, Yours faithfully,

Date: M. Asifa Prim Malar,

APPENDIX - III

☎: 04652 -251136

L.M.S. HIGHER SECONDARY SCHOOL

ZIONPURAM, MONIKETTI POTTAL P.O. 629 501 - K.K. DISTRICT

KANYAKUMARI DIOCESE C.S.I.

From :

Headmistress / Correspondent,

To :

Letter No.

Date : .....

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mrs. M. Asifa Prim Malar, M.Sc Nursing student of Nehru Nursing College, Vallioor has conducted a study on "A study to assess the effectiveness of Acupressure on relief of dysmenorrhoea symptoms among adolescent girls in our school for a period of one month from 1-7-015 to 31-7-015.

T. Rachel Kausalya

Signature of the Headmistress

HEADMISTRESS
L.M.S. HIGHER SECONDARY SCHOOL
ZIONPURAM - 629 501

APPENDIX - IV

L.M.P.C.Higher Secondary School Puthalam. PH: 04652-286462

KANYAKUMARI DISTRICT EDNL.DT.THUCKALAY.

The Headmistress

TO WHOM SO EVER IT MAY CONCERN

This is to certify that **Mrs.M.ASIFA PRIM MALAR**, M.Sc Nursing Student of Nehru Nursing College, Vallioor has conducted a study on "A study to assess the effectiveness of Acupressure on relief of dysmenorrhea symptoms among adolescent girls in our school, for a period of one month from 01.07.2015 to 31.07.2015.

L.M.P.C. HIGHER SECONDARY SCHOOL PUTHALAM 629 602

HEADMISTRESS
L.M.P.C. HIGHER SECONDARY SCHOOL
PUTHALAM - 629 602

APPENDIX-V

LETTER SEEKING EXPERT'S OPINION FOR CONTENT VALIDITY

From

M. Asifa Prim Malar, II M.Sc., Nursing

Nehru Nursing College,

Vallioor, Tirunelveli.

To

Through

The Principal,

Nehru Nursing College,

Vallioor, Tirunelveli.

Respected Sir/Madam,

Subject: Request for opinion and suggestions of expert for establishing content validity of research tool.

M. Asifa Prim Malar, II year student of Master of Nursing course child health nursing at Nehru Nursing College. I have selected this topic for my dissertation **"A study to assess the effectiveness of acupressure on relief of dysmenorrhoea symptoms among adolescent girls in selected school at Nagercoil**" .

. To be submitted to Dr.M.G.R. Medical University, in partial fulfillment of university requirement for award of Master of Science in nursing degree. I humbly request you to kindly validate the tool and give your valuable.

. Your prompt opinions and suggestions will be appreciated.

Thanking you,

Place: Yours faithfully,

Date: M. Asifa Prim Malar

APPENDIX-VI

List of experts for content validity of research tools

1. **Dr. SUDHA PONNU, M.B.B.S, M.D**

   Holy Cross Hospital

   Nagercoil,

2. **DR. Mrs. MAHZIL, M.Sc, N, Ph.D.**

   Principal of Global College of Nursing,

3. **MRS.JASINTHA, M.Sc, N**.

   Asso. Professer,

   St. Xavier's Catholic College Of Nursing.

   Chunkankadai,

4. **MRS. SARALA, M.Sc, N.**

   Lecturer

   St. Xavier's Catholic College Of Nursing.

   Chunkankadai

5. **Mrs.Premila. M.Sc. N,**

   Vice Pricipal

   Sardar Rajas College of Nursings

APPENDIX - VII

CERTIFICATE OF TAMIL EDITING

TO WHOMSOEVER IT MAY CONCERN

Certified that the dissertation paper titled "A study to assess the effectiveness of acupressure on relief of dysmenorrhoea symptoms among adolescent girls in selected schools at Nagercoil" by Mrs.M.Asifa Prim Malar, has been checked for the accuracy and correctness of Tamil language usuage and that the language used in the tool is lucid, unambiguous free of grammatical or spelling errors and apt for the purpose.

Signature

தமிழாசிரியர்,
L.M.S. மேல்நிலைப் பள்ளி,
சீயோன்புரம்.

APPENDIX - VIII

CERTIFICATE OF STATISTICAL ANALYSIS

TO WHOMSOEVER IT MAY CONCERN

Certified that the dissertation paper titled **"A study to assess the effectiveness of acupressure on relief of dysmenorrhoea symptoms among adolescent girls in selected schools at Nagercoil" by Mrs.M.Asifa Prim Malar,** has been checked for the accuracy in statistical analysis and interpretation and was apt for the purpose.

Signature

P. Anto Paulin Bruno
Asst Professor &
Bio-statistician
Scott Christian College
Nagercoil.

APPENDIX - IX

COMMUNITY HEALTH DEVELOPMENT PROGRAMME

(A UNIT OF KUZHITHURAI INTEGRAL DEVELOPMENT SOCIAL SERVICES)

THIRUMALAI SOCIAL CENTRE
CHUNKANKADAI P.O., 629 807
TAMIL NADU, S.INDIA
Ph : (04651) 230250, 230341
E-mail : jthnhc@gmail.com

SERVICE IS LOVE MADE VISIBLE

Date 23-01-2016

TO WHOM SO EVER IT MAY CONCERN

This is to certify that **Mrs.Asifa Prim Malar**, II year M.SC (N) student of Nehru Nursing College, Valliyoor has undergone training in **acupressure** for relief of dysmenorrhoea symptoms among adolscence girls under my guidance from 07-05-2015 to 16-05-2015. During the period of training she was very attentive and able to understand the techniques to the needed extent.

I wish her all success in future.

Medical officer,

(Dr.R.Christy Thilaka . BNYS)

Dr. R. CHRISTY THILAKA
Reg No 367
CHDP - HOLISTIC NATUROPATHY HEALTH CENTRE
CHUNKANKADAI 629 807
K.K DIST TAMIL NADU S INDIA

APPENDIX - X

RESEARCH TOOL

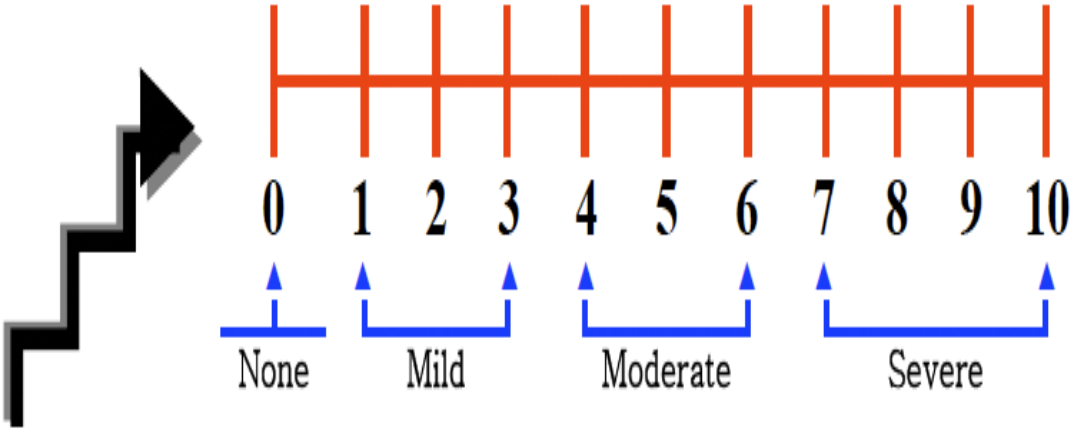
TOOL – I

Demographic variables:

1) Age in years
    a)13-14 years
    b)15-16 years
2) Age at menarche
    a)10-13
    b)14-16
3) Type of family
    a) Nuclear family
    b) Joint family.
4) Duration of menstrual cycle
    a) Less than 3 days
    b) 3- 5days
    c) > 6days
5) Family history of dysmenorrhoea
    a) No
    b) yes

TOOL - II

NUMERICAL PAIN RATING SCALE



Instructions

The investigator will explain the level of pain listed below and clients have to encircling the appropriate number, what she is experiencing.

SCORING

0 no pain

1-3 mild pain (nagging, annoying, interfering with daily activities in daily living)

4- 6 moderate pain (interferes significantly with ADLs)

7-10 severe pain (disabling, unable to perform ADLs)

TOOL-III

DYSMENORRHOEA SYMPTOM ASSESSMENT RATIN SCALE

(Kindly tick [√] in the appropriate column)

SI NO	SYMPTOMS	NO	YES		
			MILD	MODERATE	SEVERE
1.	Physiological a) Loss of appetite b) Nausea				

2.	c) Vomiting d) Weakness/Tiredness e) Giddiness f) Headache g) Feeling of heaviness in lower abdomen h) Low back Pain i) Fullness of/Tenderness of breast j) Becomes k) Frequency of micturition				
3.	Daily activities a) Unable to take bath b) Unable to eat c) Unable to go to school d) Inability to concentrate on studies e) Feeling unstable				

	f) Confined in the bed g) Feels like supporting the abdomen with pillow h) Screaming Behavioural Disturbances a) Anger/ short temper b) Sorrow/moody c) Not respond to others				

Nrhjid-1

Raf; Fwpg;G

1. taJ

   m. 13 - 14

   M. 15-16

2. gUtj;Jf;F te;j taJ

   m. 10-13

   M. 13-16

3. FLk;g tif

   m. jdpf; FLk;gk;

M. $l;Lf; FLk;gk;

4. khjtplhw; Row;rpapd; fhy msT

m. 3 ehl;fSf;F fPo;

M. 3-5 ehl;fs;

,. 6 ehl;fSf;F Nky;

5. FLk;gj;jpy; cs;sth;fSf;F khjtplha; gpur;rid

m. ,y;iy

M. Mk;

Nrhjid -38

khjtplha; Row;rpapd; NghJ Vw;gLk; gpur;ridfis msf;Fk; msTNfhy;

t. vz;	mwpFwpfs;	,y;iy	Mk;		
			kpf Fiwthd	kpjkhd	mjpfkhd
1	**clypy; Vw;gLk; gpur;ridfs;** • grpapd;ik • the;jp czh;T • the;jp • Nrhh;T • kaf;fk; • jiytyp • mbtapw;wpy; ghuk;				

	• ,Lg;G typ • khh;gf typ • vhpr;ryiljy; • mbf;fb rpWePh; fopj;jy; • kyk; fopf;f Ntz;Lk; vd;w czh;T				
2	**md;whl nray;fs;** • Fspf;f ,ayhik • rhg;gpl ,ayhik • gs;spf;Ftu ,ayhik • gbg;gpy; ftdk; nrYj;j ,ayhj epiy • epiyaw;w jd;ikia czUjy; • gLf;ifapy; ,Uj;jy; • jiyaizia mb tapw;wpy; itj;jy; • $r;rypl;L mOjy;				
3	**ele;J nfhs;Sk; Kiwapy;** **Vw;gLk; khw;wq;fs;** • Nfhgk; / Kd; Nfhgk; • tUj;jk;/ke;jkhd epiy • kw;wth;fSf;F gjpyspf;f ,ayhj epiy				